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PSYCHO-EDUCATIONAL EVALUATION OF DRUG EDUCATION PROGRAMMING

by

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A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
OF DOCTOR OF PHILOSOPHY

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "Psycho-Educational Evaluation of Drug Education Programming" submitted by William Cecil Brown in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

Society became alarmed during the last decade at the increasing interest in psychoactive drug use by school and college age youth. Many turned to education with the expectation that it could exert a preventive influence on the "drug problem." Programs and materials created in haste soon drew the disapproval of critics who identified numerous instances of error and lack of educational integrity. Concern also arose that drug education was not having the desired impact and might even be contributing to the drug problem. Although empirical evidence was lacking, the unease with drug education resulted in wide-spread reappraisal.

A confused array of programs, prescriptions, and commentary have replaced the earlier attempts to prevent drug abuse through education. Much of the current thought is conjectural and lacks specificity or empirical support. The relationship between these trends and non-sanctioned drug use is unclear.

This study has provided a psycho-educational analysis of the existing drug education thought. Specifically, it has attended to: (a) the establishment of analytical heuristics for the understanding and analysis of drug education literature; (b) identification of the nature and extent of

the drug problem(s) to which prevention efforts have been directed; (c) identification and analyses of the rationales, assumptions, and expectations of drug education; and (d) a re-examination of the school's role in providing drug education.

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CHAPTER I

NATURE AND PURPOSE OF THE STUDY

Introduction

The 1960s brought an increasing concern for the non-medical use of psychoactive drugs. During this period non-sanctioned drug use increased among school and college age youth. The resulting visibility and outspoken advocacy of users was accompanied by public alarm and demands that something be done about the "drug problem".

Initial attempts to combat the drug problem were directed towards strengthening and enforcing the laws against non-sanctioned drug use along with the expansion of treatment and rehabilitation services. As the public perceived these efforts were not having the desired impact, they began looking to education for preventive influence. Various forms of information programs were created with the expectation that young people would avoid non-sanctioned drug use if they were informed of the dangers.

The tendency of North American society to refer unresolved social problems to the school has been documented elsewhere (Taintor, 1974). The tendency to blame the school when the problems remain unresolved is also a matter of record. Since this has occurred in relation to the drug

problem, it is important to carefully examine the role of the school in providing preventive educational programming.

Historical Perspective

The current movement in drug education had its origins in the latter half of the 1960s and over a short period has had a controversial history. The demand for immediate measures in education promoted the hurried and often indiscriminate production of programs and materials. Bland (cited in Cornacchia, Bentel, & Smith, 1973) compared the situation to Leacock's mythical character who "flung himself from the room, flung himself on his horse and rode off in all directions!" (p. 3).

Early in the 1970s, doubt regarding the effectiveness of existing drug education programs appeared with greater frequency. Observers began pressing for a reappraisal. Examinations of existing efforts were highly critical and drug education was described as part of the problem rather than part of the solution (de Lone, 1972; Nowlis, 1969; Wald & Hutt, 1972; Zarraro, 1973). A major study by the National Educational Association Task Force on Drug Education (1972) found the majority of drug education programs superficial and educationally poor. Wald and Hutt (1972) in a major Ford Foundation report stated, "The consensus is

that private and public organizations are now generating too many educational programs without sufficient knowledge of basic educational techniques, pretesting, or evaluation of results" (p. 51). The National Coordinating Council on Drug Education (1973) reported over 80% of the more than 300 films it reviewed contained scientific or medical misstatements. Hammond (1973) extended this criticism to printed materials. A Department of Health, Education, and Welfare study showed that 72.2% of the 168 drug educators polled either had stopped using government materials or considered them ineffective (Macro Systems, 1972). Baker (1973), Bedworth and D'Elia (1973), Cornacchia et al. (1973), and Le Dain (1973) have made concurring observations.

Current Trends

Out of the confusion and criticism of past efforts, there has evolved a new generation of drug education programs. In place of earlier models (primarily centered around information-giving) a variety of programs and prescriptions have appeared. Most have retained an information component but this has tended to be subordinated to other dominant themes. The diversity and idiosyncratic mixture of activities and vocabulary make it difficult to categorize them beyond a nominal level. However, allowing that the distinc-

tions are not always clear, three major thrusts may be identified.

First, some approaches incorporate concepts such as problem solving, decision making, attitude formation, and values clarification making them extensions of mainstream education. These figure prominently in programs recommended by Cassel (1973), Coronado Unified School District (Bensley, 1971), Nail and Gunderson (1975), and Southern Regional Education Board (1972).

A second thrust is derived primarily from the field of psychology. Influential commentary has suggested that the development of self-concept is important in the prevention of drug "abuse". The Coronado Unified School District (1973; Bensley, 1971), National Coordinating Council on Drug Education (1974a, 1974b), the New York State Temporary Commission to Evaluate Drug Laws (Betros, 1974), and the Non-Medical Use of Drugs Directorate (1975) feel that poor self-concept or low self-esteem is a major contributor to drug abuse. A program for adolescents and their parents sponsored by the University of Minnesota also attempts to develop communication skills (Kurzman, 1974). Dearden (1971) and Dearden and Jekel (1971) recommend fulfilling students' needs for recognition, identity, self-esteem, and leadership through

sensitivity training and encounter. Dearden and Jekel (1971) have also included communications and alternatives in their suggestions. Encounter is offerred by Hecklinger (1971) as a means for assisting the development of feelings of identity and attitudes toward others and society. Other suggestions include inducing cognitive dissonance (Swisher & Horan, 1972; Warner, Swisher, & Horan, 1973), applying reinforcement techniques (Swisher, Warner, & Herr, 1972; Swisher, Warner, Spence, & Upcraft, 1973; Warner, Swisher, & Horan, 1973; Warner & Warner, 1975), and promoting assertiveness (Horan, D'Amico, & Williams, 1975).

A third category concerns alternatives to drug abuse, (life) coping skills, and life skills. Distinctions between these are not clear. In general, these recommendations are oriented to providing and encouraging substitute activities. Cohen (1973) presented an alternatives approach as an adjunct to "rational legislation, effective law enforcement, compassionate treatment programs and objective drug education" (p. 2). His approach suggests identifying motives for drug use and translating them into alternative activities that would fulfil the same needs. Others similarly refer to "constructive" alternatives (Enrich, cited in Cohen, 1973) and "superior" alternatives (Dohner, 1972) to drug use.

The Non-Medical Use of Drugs Directorate (1975) promotes both living skills and coping skills. A life skills orientation is also advocated by the National Coordinating Council on Drug Education (1974a, 1974b). The Le Dain (1973) and Worth (1972) reviews favorably reported on a Calgary Public School System life skills program which has been referred to as the Intoxicant Problem Avoidance Capability. The program director has more recently adopted a descriptive vocabulary based on "action studies" (Low, 1973) and developing personal responsibility (Low, 1976). An "effective living" program of the Borough of North York in Toronto has also been cited favorably by Le Dain (1973). Pearce (1971) takes a broader view which would include developing the total person--spiritually, socially, emotionally, intellectually, and physically.

The relationship between current approaches and non-sanctioned drug use is unclear. Many of the recommendations are conjectures which lack empirical support and logical consistency. Many have been presented in an idiosyncratic vocabulary which obscures the rationales and relationship to non-sanctioned drug use. In observing the current confusion and contradictory suggestions, Simmons (1974) facetiously advised the reader on how to select a drug education

approach. Four techniques were offerred. The first (Tidbitology) involves assembling material that might be considered interesting or important into a program that bears little relationship to learner needs. The second (False Flag or Watch for the Jolly Roger) is to present any personal-social development activity of interest and then to represent it as preventive drug abuse education. Since the public is eagerly awaiting a solution to the drug problem, the chances of acceptability (and funding) are great. Another technique (Pick of the Top Ten) is to choose from the most prominent programs available and duplicate or modify the one that is of greatest interest. The last approach (Let's Do It) is to combine any or all known techniques that might be expected to develop knowledge, skills, and attitudes related to drug concerns into a smorgasbord from which servings could be adjusted according to taste.

Major reviews have been unable to determine what type of drug education might be effective. This is not unexpected in review of the divergence of opinion in the literature. Le Dain (1973), the World Health Organization (1974), and Worth (1972) have taken a broad view and endorsed any attempt to promote personal-social development. These endorsements provide little guidance. For example, the

World Health Organization (1974) accepted an earlier definition by a UNESCO group which stated that drug education is

> a broad range of concerted activities relating to teaching/learning situations and experience which attempts to maximize opportunities for the intellectual, emotional, psychological and physiological development of young people. (p. 45)

How this definition differs from education in general was not explained. However, considering the diverse opinions in the literature, it may be accepted as a recognition that almost every development and socialization activity has been proposed as a solution to the drug problem.

Despite opposing opinions regarding how drug education should be conducted, some measure of agreement might be expected regarding purpose and general objectives. However, this has not been found. Le Dain (1973) reported an absence of any broad measure of agreement on objectives. A meeting of fifty state drug coordinators, educators, and psychologists agreed that schools and other groups were doing a poor job in drug education, but they could not agree on the purpose of drug education nor a preferred process of drug education (Arnold, 1971). Considering the history of education, expecting consensus among "experts" on the purposes or goals of drug education might be unduly optimistic. Even so,

individual programs should at least be clear in their own aims and objectives. However, this has also not been found (Braucht, Follingstad, Brakarsh, & Berry, 1973; Freeman & Scott, 1966).

Purpose of the Study

A major challenge in education is to respond to the demand for drug education. This challenge becomes more significant since prominent observers are questioning the efficacy of past and present efforts. The literature offers a confused array of programs, prescriptions, and commentary for preventing the drug problem. Existing thought has often been presented without concern for empirical support. Most recommendations for drug education have also been made in isolation from the rest of the educational process.

The purpose of this study is to provide a psycho-educational analysis of the existing drug education thought and to develop a basic structure for future programming.

Specifically, the study is intended to fulfill the following objectives:

1. To delineate analytical heuristics for the understanding and analysis of drug education thought.

Chapter II identifies and examines a number of terms and concepts which have bearing on subsequent analysis.

Special attention has been directed to the manner in which these terms and concepts have been used, the precision and/or ambiguity of meaning, and their utility for analysing, describing, and communicating past, present, or proposed directions.

2. To determine the nature and extent of the drug problem to which drug education has been directed.

Chapter III examines the nature and variability of the drug problem as found in drug education commentary. Since drug education has focussed on the drug user and prospective user, analysis has been restricted to the user's perspective.

Part I of Chapter III identifies a common problem conception in which any non-medical use of certain drugs is unacceptable. Although seldom specifically described, this has been the predominant view in drug education. Estimates of magnitude of the problem have been made.

Part II of Chapter III presents another problem conception which focuses on undesirable consequences arising from non-medical drug use rather than on drug use per se. Prevalence of undesirable consequences for non-medical drug use has been estimated. The concept of possible benefit from non-medical drug use has also been presented as it relates to probability of harm.

3. To identify and analyse the rationales, assumptions, and expectations of existing programs and prescriptions as they relate to existing empirical data.

Part I of Chapter IV examines the expectations and intentions of drug education. Relationships between these and the problem conceptions developed in Chapter III has been presented.

Part II of Chapter IV analyses major commonalities in the rationales and assumptions of drug education programs and prescriptions. These have been evaluated for consistency and compatibility with existing empirical data. Questions regarding efficacy and potential of these orientations under intended outcomes have been raised.

Part III of Chapter IV analyses the more unique aspects in the rationales and assumptions in existing programs. These have also been evaluated for consistency and compatibility with existing empirical data. Efficacy and potential of these programs for effecting the desired outcomes have been discussed.

4. To re-examine the school's role in providing education for the prevention of drug abuse.

Chapter V synthesizes the preceding analyses into a reconsideration of the school's role in drug education.

Part I raises the issue of educational integrity and ethical responsibility. Existing programs and recommendations have been criticized for their lack of concern for honesty and ethics in attempting to effect learner compliance to an abstinence objective.

Part II re-examines the practicality of drug education as a preventive strategy, with emphasis on the covert assumptions identified in Chapter II.

Part III redefines the role of the school in drug education by integrating the foregoing analyses into a consistent framework.

Definition of Terms

Difficulties in deriving meaning of terms commonly used in the drug education literature have been discussed in detail in Chapter II. However, several terms adopted in this study require definition.

Drug is any chemical substance which is non-medically used for its psychoactive properties.

Drug education has been used to denote educational programs adopted for the purpose of preventing drug abuse.[1]

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[1] The meaning of abuse has been discussed in detail in Chapter II.

Alternate terms appear in the literature with similar meaning. These include: prevention, preventive drug abuse education, drug abuse prevention, and drug abuse education.

Non-medical drug use is the use of drugs "which is not indicated or justified for generally accepted medical reasons, whether or not under medical supervision" (Le Dain, 1972, p. 395).

Non-sanctioned drug use is the non-medical use of drugs which society attempts to suppress. Non-sanctioned drugs may or may not be controlled by legislation.

Sanctioned drug use is the non-medical use of drugs which is generally accepted by society. This primarily includes the non-medical use of alcohol, nicotine, and caffeine in amounts and conditions consistent with prevailing laws and social expectations.

Prescription is a term adopted to refer to drug education recommendations which are not associated with specific programs. Much of the literature is instructive (or prescriptive) as to how drug education should be without the association with program operationalization.

Delimitations

The following delimitations have been adopted:

1. The scope of drug education in its broadest sense

includes all of those efforts that take place within and external to the formal education system. This study has limited consideration to those programs and commentary applicable to the formal education system.

2. The volume of drug education and related literature precludes exhaustive coverage. For purposes stated, analysis has been delimited to the secondary school programs except where consideration of elementary and post secondary material has been judged appropriate.

3. Several major reviews are available on drug education thought (Braucht, Brakarsh, Follingstad, & Berry, 1973), and drug education research (Berberian & Thompson, 1974; Fort, 1969; Goodstadt, 1974; Kalant, 1975; Kalant & Kalant, 1971; Le Dain, 1972, 1973; Randall & Wong, 1976; Well, 1973). These have been utilized for this study and supplemented as necessary.

4. Alcohol and tobacco education may be found in the literature as separate programs or as part of broader programs of non-medical drug use. This study has been restricted to consideration of these substances in the broader context.

CHAPTER II

ESTABLISHING ANALYTICAL HEURISTICS

Difficulties in Deriving Meaning

Meaningful inquiry and communication depend upon the establishment of a reasonably consistent and precise vocabulary. Whereas it is unnecessary for all terms and concepts to have the same meaning among observers, precise contextual meaning is essential to understanding. Science has adopted the operational definition to serve this function when consensual meaning is in doubt between communicator and recipient. However, an examination of the drug education and related literature reveals a serious lack of operational precision for many of the terms upon which explanations, rationales, and justifications rest. Several writers have noted the predominance of vague or morally loaded terminology in the literature (Einstein, 1975; Fort, 1969; Goode, 1972, 1973; Kalant & Kalant, 1971). Goode (1973) has referred to "value laden and morally loaded terminology representing matters of taste and expressions of one or another ideology, not crystallizations of scientific truth" (p. 28). Much of the literature on non-medical drug use and related educational programming actually depends upon an imprecise referent vocabulary to gain support through emotional involvement

rather than logical consistency. Even though many of these terms are not defined in any useful way, their effect is to assign emotional prejudice to drug behaviors that are not approved by the writers. Many of these terms imply moral absolutes or universal truths (Goode, 1972). Swisher and Abrams (1974) have cautioned that stated objectives for drug education often include arbitrary terms such as "healthy", "appropriate", "rational", or "good" which are seldom defined adequately. Taintor (1974) has referred to the "problem of youthful drug abuse is a cliche-ridden, hackneyed subject laden with hysteria and sloppy thinking" (p. 26). Whereas Taintor's remarks appear to be strong they reflect a real concern for the literature.

Commentary in the literature constantly alludes to scientific evidence in support of the various admonitions for drug education. Writers not only claim to be morally or idealistically correct but also desire to be empirically correct (Goode, 1972). Perhaps this is with good reason. It would appear such claims have been essential to the acceptability of the orientation being marketed. Certainly, anything believed to be scientific commands a certain legitimacy regardless of the product being sold. But a close examination reveals a large proportion of ex cathedra

statements without support. Nowlis (1969) noted this several years ago and remarked:

> There are many reasons why the 'facts' invoked in non-scientific discussions of drugs are often not facts at all. They may be second or third-hand quotations of statements attributed to scientists. There is a readiness on the part of many to accept as 'scientific fact' any statement made by, or attributed to someone labelled a scientist, whether it is a statement based on research, or uncontrolled observation, or merely on personal opinion. (p. 14)

Even when support can be verified, much of it cannot demonstrate the agreed upon standards of scientific inquiry and hence the question of validity constantly haunts the results. In agreement with Goode (1973) "even a great deal of research which does conform to the classic scientific mold is so delicately and intricately interwoven with strands of morality, ideology and politics, that it become almost impossible to make the distinctions we were taught were so clear cut" (p. 27). "Objective science and the expression of political and moral ideology often get mixed up together; distinguishing between them becomes an almost impossible job" (Goode, 1973, p. 3). In drug education, Blum (1972) has stated that the preventive purpose of drug education is mostly moral and legal since "one cannot find evidence to the effect that

such unsupervised drug use is necessarily harmful" (p. 2) even though risk potential varies according to a number of variables associated with manner of use.

There is no attempt to deny the validity of moral or ideological positions with respect to non-medical drug use. Rather, the concern arises in response to the interwoven nature of these positions with scientifically verifiable data. A simple but elegant conceptual framework has been presented by Kalant and Kalant (1971) and Kalant (1975) to assist the understanding of this problem. This framework consists of three parts. Scientific fact is derived from systematic observation according to the principles of scientific inquiry. The information so obtained and designated is a discovery of how things exist and is debatable only in terms of adequacy of the methods employed. There is little room for opinion in scientific fact except perhaps in those borderline areas where it must be decided if a particular occurrence is present or not. A closely related source of information is the probability judgment. This is the domain of an observer who has the appropriate qualifications and experience to make an educated guess where scientific fact has not been adequately established. This educated guess is a careful extrapolation based on what is known from

established scientific fact. Scientific fact and probability judgment are each within the domain of science. Another level of concern is that of the value judgment. This is the --so what?--level that determines the significance of the scientific fact and probability judgment. Value judgments lie outside the realm of science. As Kalant and Kalant (1971) point out, scientists or other experts are no better qualified to make these judgments than any other citizen given the best scientific evidence available on any matter. Herein lies one of the most perplexing difficulties for educators in identifying what constitutes a problem and what does not. Society has the right to define what is acceptable and what is not. However, acceptability is often presented in more absolute terms of right or wrong, which sometimes misleads the observer into the belief that those rights and wrongs are universal truths (Goode, 1972). Proponents of various positions usually try to invoke some sort of scientific evidence to bolster their point of view. Yet, how and why, can and must a value position be defended in the scientific arena? Insisting on scientific verification is largely futile since different observers may interpret the same set of scientific facts or probability judgments in different ways. For instance, the same probability of harm

from certain specified non-medical drug use may be seen as insignificant to some and to others alarming. The question of who is right and who is wrong does not apply here, but rather the acceptable position is determined by the value judgment of the predominant social forces.

The predominance of imprecise, emotional, and value laden terminology and research of questionable validity introduces special difficulties in analysing the literature. Attempts to interpret many of the existing rationales, arguments, and other commentary reveal gross inconsistencies and questionable logic. This situation repeatedly arises in the analysis of programs and prescriptions. For the most part, these have been dealt with in context. A few terms and concepts have been found to be basic to almost any discussion and apply across the literature, therefore, have required prior consideration and the establishment of an interpretive frame. These have been presented in immediately succeeding sections.

Meaning of Abuse

Reference to drug "abuse" is basic to almost any discussion of the non-medical use of drugs or drug education. Accepting that the predominant and often only intent of drug education is to prevent drug abuse, whatever constitutes

drug abuse is central to what is perceived as the drug problem. A major difficulty arises in the failure of most programs, prescriptions, or communications to define what is meant by abuse or the drug problem to which it refers. It is not clear in most commentaries whether reference is being made to users in general or only to those who experience drug related problems. According to Cornacchia et al.'s (1973) observations the term "drug abuse" has been used as an epithet as well as a social concept. Corder (1975a) has noted the confusion in the literature regarding the nature of the terms abuse and abuser, and poses the question, "Is one who experiments with drugs the same as an abuser?" (p. 24). Curiously, this observation did not culminate in a definition even though the author continued to use the term abuse. He further observed that if it is subjectively or moralistically decided that any use of a given drug is abuse, then the words and concepts lose all meaning and neither understanding nor solutions are possible. Irwin (1969) has expressed the need for clarification and culture-free definition of drug use and drug abuse. Similar comments have been made by Einstein (1975), Fulton (1972), King (1969), and Segal (1972). Reference has commonly been made to abuse that quite clearly means <u>any</u> use of certain non-sanctioned

drugs. Conveniently, (if not hypocritically) alcohol and nicotine are exempt. Other meanings of the term have leaned toward manner and/or consequences of use, restricting it to situations associated with resultant harm or high probability of harm, regardless of the specific drug. It has not been uncommon for use, misuse, and abuse to be used interchangeably in reference to the socially disapproved drugs (American School Health Association, 1972; Cornacchia et al., 1973; Goode, 1972). The American School Health Association (1972) has suggested the interchanging of terms risks varied interpretation of the problem being discussed. Indeed, not only does this occur but it may also be seen to protect the various allegations from meaningful analysis by obscuring inconsistencies. Even when communicators have provided definitions of these terms, it has not been uncommon for them to be vague, morally loaded, and inconsistent with contextual use.[2]

Some examples have been presented to examine the range of definitions offerred for the term abuse. Gorodetzky and Christian (1971) feel "when a medicine is taken for any

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[2] The term "misuse" has been similarly used with ambiguous, disparate, and morally loaded meaning. Since it has been used much less frequently in the literature, separate consideration has been judged unnecessary.

reason except as a treatment for sickness, it is being abused" (p. 9). Jones, Shainberg, and Byer (1973) define abuse as "to use wrongly or improperly; misuse" (p. 179). Context quite clearly demonstrated that the authors meant any use of the non-sanctioned drugs and only harmful use of alcohol. Alcohol was explicitly labelled a drug. Girdano and Girdano (1972) also use this type of simplistic, vague, and value laden definition. Drug abuse is to "use improperly" (p. 190). This is almost identical to a definition used by Sumner, Needle, and Hill (1972). Each of the references using "improper" as the criteria for abuse contain numerous ambiguities and inconsistencies in the context. Shevlin (1971) defines the term as drug taking "in amounts sufficient to create a hazard to his own health or to the safety of the community or when he obtains drugs through illicit channels or when he takes drugs on his own initiative rather than on the basis of professional advice" (p. 5). The author also informs the reader that it is "the way that they are used or abused that determines 'good' or 'evil'" (p. 5). A curriculum guide by the American School Health Association (1972) uses the definition, "Deliberate taking of a substance for other than its intended purpose, and in a manner that can result in damage to the person's health or his ability to

function" (p. xiv). Definitions of use and misuse refer to taking a drug "for its intended purpose" in or not in (respectively) "appropriate amount, frequency, strength, or manner" (p. xiv). Apparently the possibility of non-medical drug taking (i.e. not for intended purpose) which does not result in harm has not been considered. (Most use does not result in harm, as discussed in a later section.) Drugs which do not have an "intended purpose" (i.e. pharmacological or medical) such as marijuana, LSD, psilocybin, etc. create an anomaly for these definitions. Alcohol use would apparently be excused from these definitions. Cornacchia et al. (1973) define drug abuse as "use of any drug to the point where it interferes with an individual's health or with his economic or social adjustment" (p. 32). Under this conception most non-medical drug use would not be considered abuse. The authors also claim psychological dependence on a drug is not necessarily abuse under this conception. Conceivably, physical dependency <u>per se</u> would not be considered abuse. Drug abuse is considered "use of a drug with such frequency and in such concentrated dosages that the drug becomes critical to the person's lifestyle and interferes with his social, psychological and vocational functioning" (p. 11) by the Southern Regional Education Board (1972).

As with the Cornacchia et al. (1973) definition, most non-medical drug use is not considered abuse. Yet another slant has been presented by a World Health Organization Expert Committee (1969). Drug abuse was defined as "Persistent or sporadic excessive drug use inconsistent with or unrelated to acceptable medical practice" (p. 6). It is noted that this conception has been based on manner of use rather than consequences of use. Still, even allowing for the indeterminacy of "persistent" and "excessive", most non-medical use would not be considered abuse. To Irwin (1970), drug use only need "significantly increase hazard potential" (p. 1) to qualify as abuse. Although Irwin makes no reference to medical aspects, this conception is similar to that of the World Health Organization since harm need not be present.

The foregoing examples represent the range of definitions that have been presented for the term drug abuse. In so far as the different communications make contextual meaning clear and consistently apply that meaning, no particular difficulty would arise. However, most of the drug education and related literature either fails to define the term, or use it inconsistently with the stated meaning. This situation can be seen as introducing a multiple choice character to various premises and arguments upon which the various

prescriptions depend (Brown, 1976). The recipients of the communication may thus read in the particular meaning to which they have preference. If the careless or skillful communicator has not been too precise about meaning by context, any discrepancies so created would be obscured. For example, Swisher (1974) states that his "concept of abuse prevention is that abuse leads to negative consequences for the individual" (p. 148) and that this has "little to do with the amount of drug used, but rather has to do with the consequences for the individual" (p. 148). Yet throughout that article and in others under the same author's name, the criterion against which success of drug abuse prevention efforts were determined was creation of antidrug attitudes (Swisher & Crawford, 1971; Swisher & Hoffman, 1975; Swisher et al., 1972; Swisher et al., 1973; Warner et al., 1973) or reduction in drug use levels (Swisher & Hoffman, 1975; Swisher et al., 1973; Swisher et al., 1972). No attempt has been observed to determine program effectiveness by examining consequences to the user. A similar confusion may be seen in another otherwise carefully produced publication. A Special Action Office for Drug Abuse Prevention, Executive Office of the President, publication (MacLeod, McMillen, Marcus, & Hammond, 1973) defined drug abuse as "the use of a

chemical substance, licit or illicit, which results in an individual's physical, emotional, or social impairment" (p. 13). Several references to abusers or abuse later in the publication were inconsistent with the definition. For example, page 23 refers to the use of stimulants for helping the person "stay awake to drive, to cram for an exam, or to do well in an athletic contest" and then referred to "this kind of abuse". Under the definition presented these situations would not constitute abusive use unless they resulted in the given impairments. The blanket statement then becomes misleading. Another example of this kind of phenomena may be seen in Dohner (1972), who offers alternatives as a means of preventing drug abuse. Dohner fails to define abuse even though it is liberally used. Claims are made that the orientation will "result in proper use of drugs for their intended purpose" (p. 3), "have a positive effect upon healthy development" (p. 3-4), and ultimately have the goal of promoting "responsible use of potent, and potentially dangerous substances" (p. 4). The allusion to proper use and intended purpose is further confused by a statement claiming, "All use of illegal or socially disapproved drugs is not necessarily abusive" (p. 5).

For the most part, the confusion is unlikely to be

resolved by definition. Too many conflicting connotations and emotions are associated with "abuse" and would best be avoided in favor of more neutral terms with more precise meaning. A few notable publications have attempted to do this (e.g. Braucht, Brakarsh, Follingstad, & Berry, 1973; Fort, 1969; Goode, 1972, 1973; Kalant & Kalant, 1971; Le Dain, 1973; and World Health Organization, 1974). Except in quotation and where analysis has demanded this lead has been followed. However, for purposes of analysis, two operational conceptions have been adopted to represent upper and lower boundaries.

drug abuse (sense I) - any non-medical use of a non-sanctioned drug.

drug abuse (sense II) - non-medical use of a non-sanctioned drug that interferes with an individual's physical health, psychological well being or social functioning.[3]

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[3] It is acknowledged that this conception is somewhat vague and must remain so because of the difficulty in deriving agreement or identifying when interference is present. It should be noted that this excludes temporary discomforts that may accompany non-medical drug use which do not have lasting undesirable consequences.

Significance of Magnitude

A concept of magnitude is essential to identifying concerns related to non-medical drug use and drug education. If a particular drug related phenomena could be identified in only a small number of individuals, the situation takes on a different significance than if the same phenomena could be identified in many individuals. But magnitude is not merely a case of numbers. It may be conceived in both absolute and relative terms. For example, based on statistics provided by Le Dain (1973) there would be about 1800 daily users of heroin in Alberta, Saskatchewan, and Manitoba--an estimate of absolute magnitude. Few observers fail to feel concern about such a number of persons engaging in a high risk activity. Based on population statistics, daily heroin users in the prairie provinces would constitute a relative magnitude of about .07% of persons 15 years of age and over. In drug education (as well as law enforcement or treatment), the types of responses that are possible, practical, and justifiable are directly linked to both types of magnitude. In failing to make such considerations, it has not been uncommon for observers concerned about large numbers of drug users (real or perceived) to propose corrective measures for application to groups of persons in which the proportion

of users is small. In drug education direct concern for magnitude has been found in the rationale of only two programs, namely, Cornacchia et al. (1973) and Southern Regional Educational Board (1972). Other programs and prescriptions assume that they are justifiable on the basis of magnitude. However, analysis does not necessarily support this assumption.

Two important aspects of magnitude are critical to drug education. Both are directly related to the nature and justification of drug education as it has evolved. First, drug education has almost exclusively been considered, designed, and presented for application to all students in a given population or to some undifferentiated subgroup. A few pilot studies have used a volunteer system (e.g. Deardon & Jekel, 1974; Kurzman, 1974), but with no attempt to select program recipients on the basis of program or goal applicability. The second aspect is that the major (and often only) justification of drug education has been to prevent drug abuse (undefined). Significance of these aspects have made it necessary to make two assumptions although these have not been stated in program justifications.

Assumption 1. It must be assumed that the problem is of sufficient concentration (relative magnitude) to warrant

application of any preventive strategies to all students or to some undifferentiated subgroup. All students do not become part of the drug problem. Only a certain proportion of students can be considered at risk of becoming drug abusers (however defined). As the World Health Organization (1974) has stated, "There is little point in attempting to prevent the development of drug-related problems among persons already at low risk of experiencing such difficulties" (p. 37). In the interests of economy, efficiency, and appropriateness, preventive strategies must be applied primarily to those who are at risk of developing the problems for which the program has been designed to prevent.[4]

Assumption 2. It must be assumed that the particular preventive strategies adopted will apply to a sufficient proportion of those constituting the problem or at risk of becoming part of the problem. Prevention strategies are based on various notions of what causes the problem whether ignorance (information approaches), poor self-concept (self-concept development approaches), inability to communicate

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[4] Since most prescriptions do not specify what it is that they are attempting to prevent (except some vague notion of drug abuse), little real consideration has been given these issues.

(development of communication skills approaches), etc. The adoption of strategies based on causes of non-medical drug use presuppose the occurrence of those selected causes are sufficiently common to warrant application of the corrective program. In almost all programs this has not been verified, but rather assumed. For instance, it has been suggested that curiosity is the predominant motivation for most non-medical drug use (Goode, 1972; Le Dain, 1973; Nowlis, 1975). Numerous other reasons for use have been postulated beyond that attributed to curiosity (Dohner, 1972; Kalant & Kalant, 1971; Le Dain, 1973; Warner, 1975). Most drug education programs are based on conceptions of cause which do not include curiosity and are restricted to a few "causes" which appear to be undesirable attributes (e.g. poor self-concept, deficient decision making skills, defective mental health). Considering the research (reviewed in Chapter IV), these various conceptions of cause are likely to apply to a small proportion of non-medical drug users (if any). Assuming also that no technique would be completely effective in eliminating the cause to which it is directed, the proportion of students "saved" might be very small.

This situation may be clarified by the use of symbols as follows:

$$T = N_1 + P_1$$

where

T = total target group

N_1 = number of T not at risk of becoming part of problem

P_1 = number of T constituting problem or at risk of becoming part of problem.

Corrective program (based on perception of cause) applied to N_1 and P_1

If successful, some of P_1 are converted so that they are not part of the problem, resulting in

$$T = N_2 + P_2$$

where

$N_2 = N_1 + P_1$ (converted) $\quad N_2 > N_1$

$P_2 = P_1 - P_1$ (converted) $\quad P_2 < P_1$

Under the assumptions presented

1. $\frac{P_1}{T}$ must be of sufficient magnitude to justify applying any corrective program, and
2. $\frac{P_2}{P_1}$ must be of sufficient magnitude to justify applying particular corrective programs to N_1 and P_1 (unconvertable, i.e. P_2).

It is difficult to make accurate estimates of magnitude because of the indeterminacy of the problem and the relative lack of accurate epidemiological data. However, since this

has been identified as critical to justifying preventive programming, magnitude estimates have been presented throughout the following pages. Two major divisions will be noted. Both apply directly to the assumptions presented above. First, estimations have been made in conjunction with discussion of the nature of the problem. These estimates have been made in relation to the variable meanings of the term abuse as discussed in a previous section. The other type of estimate has been made relating to the perceived causes of drug abuse upon which various drug education programs have been premised. These also have taken into consideration the variable meanings of the term abuse.

The Continuum of Non-Medical Drug Use and Magnitude

It should be obvious that degree of involvement in non-medical drug use varies between minimal and total preoccupation. Some observers have reported this continuum as an approximate log normal distribution (Irwin, 1970; Kalant & Kalant, 1971; Le Dain, 1973; Smart & Whitehead, 1972). This means that there are many light users, fewer moderate users and even fewer heavy users. Herein lies another prominent omission in the drug education literature. The overwhelming majority of commentary has been preoccupied with undefined drug abuse and a desire to prevent such abuse to the extent

differing drug use has not been taken into consideration. Degree of involvement in non-medical drug use is closely inter-related with the concepts of abuse and magnitude previously considered. It also becomes important in the analysis of drug education programs and in attempts to conceptualize what constitutes the "drug problem". For instance, if the majority of users try a drug once or a few times then discontinue use, it would have different implications for drug education than if the majority continued to use drugs regularly. The probability of associated problems under these conditions has an important bearing on drug education efforts. Obviously, the particular drug in question also has bearing on these issues. These have been considered in detail in a later section.

In recognition of a use continuum, several writers have attempted to present typologies of use (e.g. Cornacchia et al., 1973; Nowlis, 1975; World Health Organization, 1974). Discrete categories of non-medical drug use do not exist, therefore, these typologies are arbitrary. However, as Nowlis has pointed out, it is important to make some gross distinctions in attempting to derive a useful perspective. Such categorization also has conceptual usefulness to the present analysis.

Cornacchia et al. (1973) have presented a categorization system credited to the director of the Haight Ashbury Free Medical Clinic (D.E. Smith). These types are the non-user, experimenter, periodic user, compulsive user, and relapse user. (Non-users do not use the drugs of concern.) As noted, this may or may not include sanctioned drugs such as alcohol and nicotine. Experimenters try drugs for a short period and then discontinue use. Periodic users use drugs on a more or less regular basis but do not become preoccupied with such use. Compulsive users become dependent (physically and/or psychologically) and the drug use becomes critical to their lifestyle. Relapse users are those who have left the ranks of compulsive users and are engaging in a struggle against it. A slightly different conception has been introduced by Nowlis (1975). She has attempted to provide a greater operationalization in terms of incidence. This includes experimental use (one to three times), casual use (perhaps once or twice per month), regular use (perhaps weekly or daily), and heavy or compulsive use (perhaps daily use with the implication of preoccupation). Nowlis has cautioned that this gross categorization would be qualified by specific drugs under consideration. The World Health Organization (1974) has identified three categories (initial

or experimental, casual, dependent) with similar meaning to the corresponding categories in the Cornacchia et al. schema (1973).

In relating magnitude to the various types of drug use Nowlis (1975) has stated that virtually all studies agree that the majority of experimenters of illicit drugs do not become users. Cornacchia et al. (1973) and the World Health Organization (1974) have made similar observations. Such statements support the log normal relationship described above. Successively fewer persons progress from experimental to casual to regular to dependent drug use. Studies examining extent of use typically find the majority of users in the low use category. For example, Smart and Fejer (1974) found, with the exception of alcohol, tobacco, and marijuana, the majority of users did so only on one or two occasions in the preceeding year. Alcohol, tobacco, and marijuana use were not presented in those terms. Cornacchia et al. (1973) reported data from junior and senior high schools in San Mateo County, California. Although data were reported by grade and sex, the same pattern emerged throughout. As an example, grade 12 males showed the following "any use" rates: alcohol 83.6%, tobacco 53.5%, marijuana 59.1%, LSD 21.1%, amphetamines 27.0%, barbiturates 18.6%, and heroin 5.9%.

Corresponding figures for use ten times or more (in the preceeding year) were: 59.3%, 37.7%, 43.7%, 7.3%, 10.9%, 7.3%, and 3.0% of the preceding useage figures. Brown, Schurr, and Di Puma (1975) reported a similar pattern in rural Alberta junior-senior high schools. At the grade 12 level, for instance, percentages of usèrs indulging four times or less comprised 67% to 100% of those admitting any use (excluding alcohol, tobacco, and marijuana). Only 20% of those admitting use of alcohol used it 6 times or less. Marijuana use was 33% using 6 times or less and tobacco only 10% used less than 10 cigarettes. All data was based on the six months prior to the data collection. The Edmonton Public School Board (1971) did a comprehensive study on drug use. Of the 3,246 students responding (grades 7 to 12), 1,062 admitted use of drugs (32%) other than alcohol and tobacco in the previous six months. Eighty-one percent of those who used drugs at one time or another had stopped at the time of the survey.

It appears that the majority of non-medical drug users discontinue use after brief involvement. The exceptions are alcohol use, tobacco use, and probably marijuana use. In each of these it would appear that a substantial minority discontinue use after brief involvement. In any event, the

majority who continue to use alcohol and marijuana do so in "moderation". This does not hold for tobacco since most users use that substance on a daily basis (Brecher, 1972; Le Dain, 1973).

Cause and Effect

Undesirable effects from non-medical drug use are what constitutes the drug problem. To determine the nature of the problem one must examine the kinds of harm resulting from the non-medical drug use in question.[5] Cause, on the other hand, is an essential concept in attempting to prevent the problem. Drug education prescriptions either imply or state that they are based on correcting causes. However, cause and effect have become inseparably intertwined in the literature. This has occurred primarily where psychologically originated procedures have been recommended (for example, self-concept development, mental health development, sensitivity training, communication training). It is extremely difficult to determine whether such psychological concomitants precede, develop concurrently or result from such use

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5 It would also reasonably include attempting to determine beneficial effects of such use. However, the academically "respectable" literature has almost exclusively focussed on harm. A discussion of this has been reserved for a later section.

(where they may be demonstrated to exist at all).[6] This situation has been complicated by statements attributed to "authorities" for which empirical verification cannot be found. The impact of such statements may be profound by virtue of the apparent source credibility even in the absence of verifiable evidence. For instance, Kalant and Kalant (1971) have observed that people who strongly oppose non-medical use of certain drugs, view such use as escapism. A case in point is seen in a statement by Baird (1970). "Anyone who smokes marihuana . . . already has a mental problem. They are taking it to escape reality . . . I do not care what euphemism you want to employ, they are mentally ill" (p. 9). Dr. Baird's comments were reported as part of a Select Committee on Crime. Other persons opposed to non-medical use of certain drugs argue for prevention on grounds that psychopathology is caused by such use. For instance, Kolanski and Moore (1971) reported that all of their young patients who smoked marijuana more than a few times demonstrated serious psychological disturbances. Among these observations were confusion, anxiety, depression, paranoid

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[6] Discussed in detail elsewhere.

suspicions, and regression to a more infantile state. "In no instance were these symptoms in evidence prior to the use of marihuana" (p. 488). The American Medical Association added to the dignity of these admonitions by releasing advance copies to the press, and a press release claiming it to be definitive proof of marijuana's harmful effects. However, a critique received by the American Medical Association drew a response stating the article was "purely anecdotal and not . . . an example of 'scientific research'" (Knapp cited in Goode, 1972, p. 80).[7] It is interesting that mental illness has been postulated as both a cause and effect of undifferentiated use of non-sanctioned drugs. In drug education, however, this cause-effect confusion has been largely unrecognized, since problems to be prevented have not been adequately specified.

Other complications exist. With the exception of alternatives orientations, drug education prescriptions are based on a deficiency concept of cause. Some sort of deficiency in the user or prospective user is assumed to cause the non-medical use in question. For programs

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[7] For further discussion on the "hierarchy of credibility" see Goode (1972) pages 13 to 17.

(excluding alternatives) attempting to prevent drug use per se (abuse sense I) this presents some difficulty. The study of positive causes has been discouraged. But this possibility is very real. In an earlier section evidence was presented suggesting most users of non-sanctioned drugs do not progress past the experimental stage. Reasons for drug use of the experimental variety are most often linked to curiosity (World Health Organization, 1974). (Curiosity is generally considered a positive attribute.) Other observers have used various labels to describe the reasons for experimental use but have emphasized attributes that are neither different from non-using peers nor are generally undesirable (Goode, 1972, 1973; Le Dain, 1973; Nowlis, 1975). If this is so, promoters of deficiency correction programs would be in the awkward position of applying a corrective procedure which does not apply to the majority of non-medical drug users.

Summary

A number of considerations have been identified as important to analysis of the drug education literature. Much of the commentary has been dominated by vague and morally laden terminology to the extent that meaning is difficult to establish. Of special concern is the term "abuse" upon

which much of the rationale is based. Drug education has been established to prevent drug abuse. But numerous ideas of what constitutes abuse may be found in the literature and in the drug education rationales are either undefined or used with inconsistent meaning. For purposes of analysis, two definitions of abuse have been adopted representing the range of usual meaning. Where meaning has not been clarified by the authors, these have been used to discuss the alternative possibilities.

Drug education programs exist on the supposition that there is a drug problem and that it exists in sufficient magnitude to warrant the recommended preventive efforts. The extent to which this may be verified is obscured by a widespread failure to define or describe the nature of the problem to be prevented. In order to examine the magnitude question, two assumptions have been identified. One of these relates to the extent of the problem to which the drug education procedures are to be applied and the second relates to the relation of the selected strategies to the problem.

Extent of involvement with non-medical drug use is closely interrelated with concepts of abuse, problem, and magnitude. Under any conception of abuse or problem, probability of harm is central to the concern. But as discussed

at length in succeeding chapters, drug related harm is associated with degree of drug involvement. It is therefore important to incorporate consideration of the continuum of drug use in the analysis. The continuum of use has been shown to have an approximate log normal form.

Cause has also been important in the drug education literature. Programs have been based on prevention through remediation of causes. Of particular interest is the tendency to identify causes in terms of negative states or attributes. Most commentaries do not entertain the possibility of drug abuse (however conceived) caused by positive states. This interrelates with the continuum of use since it is likely for different levels of use to be due to different causes--positive and negative (Brecher, 1972; Fort, 1969; Le Dain, 1973; Warner, 1975). Program rationales generally allude to scientific evidence in support of the particular causes adopted. Reference to this supposed evidence is seldom specific. Attempts to verify these rationales are frustrated by the inability to separate cause and effect of the drug use in question. Analysis by Le Dain (1973) and others have cautioned that cause and effect are not easily separated in the scientific literature. This introduces additional complications in attempting to analyse the drug education literature.

CHAPTER III

THE NATURE AND EXTENT OF THE DRUG PROBLEM

Introduction

An essential first step in any prevention program is to determine the problem(s) to which efforts are to be directed (World Health Organization, 1974). Yet "drug problems have been so ill-defined in such global and value-laden terms that it is little wonder that disagreement and controversy prevail" (Nowlis, 1975, p. 11). Numerous observers have testified to the pervasiveness of uninformed misperceptions of the drug problem (Blum, 1972; Brecher, 1972; Cornacchia et al., 1973; Fort, 1969; Fulton, 1972; Goode, 1972, 1973; Kalant & Kalant, 1971; Le Dain, 1973). In reviewing the drug education literature Dearden and Jekel (1971) reported an absence of clear problem definition. Cornacchia et al. (1973) found problem conceptions to be largely the result of emotional response rather than a rational consideration of factual information. In their analysis, this failure to precisely determine the problem has compromised past educational efforts. According to Kalant and Kalant (1971) people hold "remarkably inconsistent ideas about what constitutes a drug problem" (p. 2). Blum (1972) has referred to the prevalence of expectations for "simplistic solutions to

quite erroneously defined problems" (p. 5).

Against a backdrop of misinformation and misperception of problem characteristics it is not unexpected that most drug education programs and prescriptions lack clearly specified goals (Swisher & Abrams, 1974). Drug educators and administrators have had "difficulty defining both the nature of the problem and the goals sought" (Swisher & Abrams, 1974, p. 11). A clear operational conception of the drug problem is fundamental to the establishment of appropriate educational responses. As elementary as this is, most programs and prescriptions for drug education avoid detailed consideration of what is to be prevented. The problem then defaults to an indeterminate notion of incidence, and the program's effectiveness is judged on its ability to reduce drug use per se. This may be observed in a number of programs which claim to have effect on undesirable consequences from non-medical drug use rather than use per se. The contradiction has not been acknowledged.

Drug education is a contraction of preventative drug abuse education, therefore previous discussion regarding the meaning of abuse is continuous with problem identification. The meaning accepted for drug abuse will determine the nature of the problem. Problem definition is also dependent upon

magnitude, cause and effect, and continuum of use presented in previous sections. In this chapter, these discussions have been brought together in the identification of the drug problem. There are, however, no unequivocal statements of the drug problem. As presented in the Kalant and Kalant (1971) framework, even when scientific fact exists and probability judgments can be agreed upon, different value interpretations may continue to exist. The nature of the problem is largely a value position. In consideration of this, a representative range of problem conceptions have been explored which extend from the definitions of abuse presented in Chapter II.

Part I--Incidence = Problem Concept

The incidence = problem conception is a direct extension of abuse definition sense I--any non-medical use of a non-sanctioned drug. Proponents of this view focus primarily on drug use per se. However, since most non-sanctioned drug use does not result in harm to the users[8], a moralistic factor is necessary to explain this commitment (Fort, 1969; Goode, 1972). Sanctioned drugs, such as alcohol and nicotine

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[8] This has been discussed in Part II of this chapter.

create an inconsistency under this problem conception. As Kalant and Kalant (1971) note, few people consider all use of alcohol a problem. There is a common attempt to reconcile this inconsistency by arguing that alcohol is a legal drug. However, two contradictions make this reasoning untenable. First, alcohol use is not legal for the majority of students throughout the twelve grades. Second, many non-sanctioned drugs are not illegal at any age. Drug education programs which include alcohol attempt to promote safe use of the substance rather than abstinence. Most programs attempt to promote abstinence for the non-sanctioned drugs. Additional complications are noted in attitudes towards tobacco use. Most drug education programs including tobacco attempt to promote abstinence. Yet, tobacco is a sanctioned drug and society permits active promotion of the substance through advertising. One arm of the government promotes use of tobacco, while another (Health and Welfare Canada) attempts to discourage its use.

As presented in Chapter IV, the incidence = problem conception is most prevalent in drug education programming since abstinence is the intended outcome for the non-sanctioned drugs (and tobacco). Those drugs which are included under this problem conception are arbitrary and cannot be

justified by consistent criteria. However, the identity of the non-sanctioned drugs receive substantial agreement.

Estimating Magnitude Under the Incidence = Problem Conception

Estimating magnitude under the incidence = problem conception is relatively straight forward. A number of surveys are available that have attempted to discover rates of non-medical drug use. Most of the data has been reported on junior and senior high school students with little being directed to the elementary student. Although some data may be found on post-secondary institution students and other adult groups, these are not of interest here.

Large scale studies have been reported by Bakal (1974), Bakal, Milstein, and Rootman (1975), Brown et al. (1975), and Smart and Fejer (1974). Each study has made inquiries of non-medical drug use among junior and senior high school students in the preceeding six month period. The Bakal (1974) and Bakal et al. (1975) reports were based upon longitudinal studies between 1971 and 1974 in rural Alberta. Only the most recent data from 7,704 students has been considered here. Brown et al. (1975) attempted to complement the rural Alberta findings in northern rural Alberta. This study reported data on 1,189 students. Smart and Fejer (1974) presented data from the Toronto area collected every two

years from 1968 to 1974. Only the most recent data (1974) on 3,479 students is of interest here. Findings of these three studies have been presented in Table 1. Whereas substantial agreement may be noted between these studies, some discrepancies require discussion. The Smart and Fejer (1974) study has reported an incidence of barbiturate use several times higher than that found in other studies. However, according to Smart et al. (1973), the barbiturate question was reworded in 1972 to include "pain killers". As a result, an apparent jump from 4.3% in the 1970 data (Smart, Fejer, & White, 1970) to 18.2% in the 1972 data (Smart et al., 1973) was probably due to the question change rather than a use change. Returning to Table 1, barbiturate data from the other two studies do not include pain killers. Other differences appear in the Brown et al. (1975) study. Both "speed" and "other stimulants" use appear to be higher than found in the other two studies. Confusion is noted in the questions from which this data was obtained. The speed question (#13) asked about <u>injected</u> speed whereas the other stimulants question (#14) asked about stimulants excluding speed. Since no question asked about oral speed use, and the term speed has become generalized in meaning, the responses to these questions may have been on bases other than intended.

Table 1

Summary Data of Three Studies on Non-medical Drug Use Among Junior and Senior High School Students (in per cent)

Drug	Grade	Rural Alberta[1] 7	Rural Alberta[1] 12	Northern Rural Alberta[2] 7	Northern Rural Alberta[2] 12	Toronto[3] 7	Toronto[3] 12
Tobacco		22.7	45.9	31.5	41.5	23.2	34.4
Alcohol		51.3	85.1	63.6	90.6	52.5	92.6
Marijuana		1.2	33.6	3.2	50.9	5.2	30.5
Glue		7.0	2.6	9.2	0	8.0	.9
Other Solvents		17.3	4.3	18.8	5.7	14.0	1.7
Barbiturates		.8	5.2	0	5.7	11.8	17.6
Opiates		.7	5.2	.6	5.7	2.9	2.9
Speed		.9	2.6	4.5	9.4	2.5	1.4
Other Stimulants		1.4	7.1	2.7	9.4	2.8	4.3
Tranquilizers		2.7	10.6	2.1	15.1	4.5	9.0
LSD		.6	9.0	.3	18.9	1.6	2.3
Other Hallucinogens		.7	8.1	1.2	13.5	2.4	4.4

[1] Bakal et al., 1975

[2] Brown et al., 1975

[3] Smart and Fejer, 1974

Other differences in the Brown et al. (1975) study are found in the grade 12 levels for tranquilizers, LSD, and other hallucinogens. Since these figures are derived from a relatively small grade 12 group (53 persons) and the number of admitted users ranges from seven to ten people, the probability of these being atypical is increased. Greater confidence may be given to the findings of the other two studies. The large discrepancy in marijuana use between the Brown et al. (1975) and the other studies is unexpected although the small grade 12 sample size may partially account for it.

Another large scale study is of interest because of its local reference. In 1971, the Edmonton Public School Board surveyed 3,246 junior and senior high school students. Different categorization makes comparison with previously reported studies difficult. However, drug use ranges found between grades 7 and 12 were as follows: tobacco, 51.5-51.6%; alcohol, 60.5-81.2%; marijuana, 16.2-34.3%; solvents, 5.0-2.5%; depressants, 6.1-7.5%; opiates, 3.1-4.8%; stimulants, 5.9-8.0%; and hallucinogens, 8.3-14.7%.

Estimates have been made by Le Dain (1973) for the Canadian context. Except for tobacco, estimates for high school drug use were: alcohol, 40-87%; amphetamines and other stimulants, 5-9%; hallucinogens, 5-10%; barbiturates,

sedatives, hypnotics, tranquilizers, 3-8%. Tobacco use was estimated for 15 years of age and over at 39.8%. The Le Dain (1973) estimates are roughly consonant with the data presented above and no major discrepancies are noted.

Differences in use between males and females are also noted. The Smart and Fejer (1974) study found significantly greater use by males of alcohol, tobacco, marijuana, and LSD. Females showed greater use of barbiturates and tranquilizers. All differences were less than 5%. In Bakal's (1974) data (the complete version of Bakal et al., 1975), males were found to use alcohol, marijuana, speed, and LSD more often while females led in tobacco, solvents, and tranquilizers. Neither magnitude nor significance of these differences were reported. Significantly more males than females used alcohol and marijuana in the Brown et al. (1975) study. Differences were 4.6% and 5.4% respectively. Although data from the Edmonton study (Edmonton Public School Board, 1971) were presented in a different format, females tended to lag behind males in use of alcohol, tobacco, and other drugs (undifferentiated).

Change

Discussion of incidences of non-medical use is incomplete without consideration of how use is changing over time.

The literature is replete with assumptions that non-medical drug use will continue the dramatic increase observed in the later 1960s and early 1970s. These assumptions have been used as justification for applying drug education to all students.

It is unexpected that the literature pertaining to change over time is limited. In 1973, Le Dain attempted to explore patterns of use over time, although much of it was impressionistic rather than empirical. A consensus among Canadian observers was noted that opiate use was increasing, although no one claimed to know the rate of increase. Intravenous amphetamine use peaked in 1970 and declined thereafter. Oral use of amphetamine and other stimulants showed no change between 1968 and 1970. The dramatic increase in hallucinogenic use between 1968 and 1970 slowed between 1970 and 1972 suggesting stabilization. No changes were noted between 1968 and 1971 in the non-medical use of sedative-hypnotics (including barbiturates). Tobacco use declined slightly between 1965 and 1972. The Le Dain (1973) observations have essentially concurred with longitudinal data from Toronto students between 1968 and 1974. These data were reported in Smart et al., 1970; Smart et al., 1973; and Smart and Fejer, 1974. With the exception of the 1970 data

which included grade 6, all studies sampled drug use in grades 7, 9, 11, and 13. A large increase was noted between 1968 and 1970 in the use of alcohol (46.3% to 60.2%), marijuana (6.7% to 18.3%), opiates (1.9% to 4.0%), LSD (2.6% to 8.5%), and other hallucinogens (2.0% to 6.7%). However, the 1972 study (Smart et al., 1973) reported that use of many drugs appeared to stabilize. Alcohol use continued to increase but at a slower rate (60.2% to 70.6%). An apparent jump in barbiturate use from 4.3% to 18.2% appeared to be artifactual to the rewording of the question to include "pain killers". Further stabilization was noted in the 1974 sample along with some declines. Significant differences were reported as follows: alcohol, 70.6% to 72.9% (up slightly); tobacco, 38.3% to 33.7% (down); marijuana, 20.6% to 22.9% (up slightly); glue, 2.9% to 3.8% (up slightly); LSD, 6.4% to 4.1% (down); and other hallucinogens, 7.2% to 5.7% (down slightly). In the 1974 study, Smart and Fejer (1974) were able to find only one other study of drug use over time. This study from San Mateo County, California (unpublished, quoted in Smart & Fejer, 1974) essentially paralleled the trends found in the Toronto studies. Another long term investigation was published in 1975 by Bakal et al. This involved Alberta rural students between 1971 and 1974,

grades 7 to 12. The authors reported with the exception of marijuana use, non-medical drug use remained very stable between 1971 and 1974. Marijuana use increased from 11.9% to 19.5%

According to the data, non-medical drug use has undergone substantial stabilization in recent years. The use of alcohol is perhaps a notable exception because incidence has increased with the lowering of legal drinking age in several provinces. Although trends are subject to change, there appears to be little empirical basis for expecting dramatic increases in most non-sanctioned drug use in the near future.

Part II--Undesirable Consequences = Problem Concept

> Most if not all adolescents use drugs in some form at some time in their lives. However, not all young persons who use drugs are problems, nor do many who use drugs develop problems. (Cornacchia et al., 1973, p. 12)

The above quotation is representative of a school of thought which views the drug problem in terms of undesirable consequences (see abuse--sense II). Proponents of this position question whether a problem exists if there are no manifest undesirable consequences. A number of other observers have also confirmed observation that most non-medical drug users neither experience nor cause drug related problems

(Blum, 1972; Brecher, 1972; Cornacchia et al., 1973; Dohner, 1972; Fort, 1969; Gilbert, 1975; Halleck, 1970; Irwin, 1970; Kalant & Kalant, 1971; Leavitt, 1974; Le Dain, 1973; Plant, 1974; Robinson, 1975; Southern Regional Education Board, 1972; Wells, 1973; World Health Organization, 1974). Problems that do occur are associated with a relatively small proportion of users. Kalant and Kalant (1971) have observed "the degree of risk is related not so much to the specific drug which is used as to the amount, frequency and manner of its use" (p. 85). As with other writers, Leavitt (1974) has made a case for his claim that most commonly used drugs, when used intelligently, are relatively free from serious side effects. He has also argued that most drug use may be safer than sanctioned activities such as football, boxing, automobile racing, motorcycle racing, or skiing.

Problems associated with non-medical drug use are not uniformly distributed across the use continuum. Although harm may occur at any level of use, it is primarily associated with the higher levels (Gilbert, 1975; World Health Organization, 1974). Reference may be found to excessive use (Gilbert, 1975), heavy or compulsive use (Nowlis, 1975), addictive or dependent use (Braucht, Brakarsh, Follingstad, & Berry, 1973; Le Dain, 1973), dysfunctional drug use

(Southern Regional Education Board, 1972), or other terms referring to the high end of the use continuum. In each case the message is approximately the same--undesirable consequences are associated primarily with the high levels of involvement. The greater the involvement, the greater the probability of harm. Le Dain's (1973) analysis found most evidence of drug related harm has been derived from clinical cases. Similarly, the Braucht, Brakarsh, Follingstad, and Berry (1973) review found the psychosocial correlates of non-medical drug use to be derived substantially from dependent users. A recent presentation to the Canadian Senate subcommittee investigating marijuana legislation emphasized that harm associated with cannabis use is also associated with heavy use (Kalant, 1975). In order to demonstrate harmful effects, out of the ordinary consumption had to occur. Others have concurred (Fort, 1969; Goode, 1972; Kalant & Kalant, 1971; Nowlis, 1975).

Identifying the nature of the problem under the undesirable consequences concept is complicated since what constitutes an undesirable consequence is subject to debate. Previous reference has been made to the impossibility of making an unequivocal statement of the problem. This has been a major reason why drug education has focussed on the

simpler incidence = problem orientation. A major complicating factor here is what Nowlis has referred to as the "drug problem problem" (cited in Brecher, 1972, p. 521). This is the damage resulting from the means with which society has attempted to deal with the drug problem. Inherent problems of the non-medical use have been hopelessly intertwined with problems originating primarily from society's reaction. There has been no attempt to deal with these separately. However, since the focus of school programs has been on the user and prospective user, identification has been limited to the user's perspective. In order to facilitate analysis this has been presented in sections dealing with psychological/neurological aspects, social/legal aspects, and medical/physiological aspects of the problem. Since the undesirable consequences = problem concept has been conceived out of abuse--sense II, temporary discomforts from non-medical drug use have been excluded.

Psychological/Neurological Aspects

Undesirable psychological effects of non-medical drug use are probably the most difficult to determine. Reference has been made to the difficulty in determining cause or effect for psychological conditions which correlate with non-medical drug use. A number of factors further complicate

this situation. Le Dain (1973) noted most of the studies in which psychopathological diagnoses are reported are from clinical observations which have not been empirically tested. This limits the confidence that can be placed in their conclusions. Jamison (1972) found psychiatric observations of drug dependent clients were often influenced according to common drug user stereotypes. He also found a preponderance of vague diagnostic categories and lack of operational definition to describe the psychological condition. Goode (1972) has concurred especially on the latter point. Le Dain (1973) has described the subjective differences in describing conditions which demonstrate the intrusion of value judgment. For instance, drug effects that may be described as "psychedelic" by certain persons are often described as "psychotic" by others. "Increased sensitivity to humor" may be seen as "unnatural hilarity" or "loquacious euphoria" by others. "Exploration of inner consciousness" might become "escape from reality."

> Clearly, the labelling of certain aspects of a drug experience as adverse, neutral or positive is often a function of individual and social constructs of normality, morality and reality, and generally implies a definite value judgment beyond the objective reporting of behavior and experience. (Le Dain, 1973, p. 297)

Le Dain (1973) further explains another difficulty in this area.

> In general, little information can be gained about the 'normal' user of drugs through patient or treatment service sampling, since the subject population is defined a priori as pathological. Treatment facilities make contact with few people who are not patients, and their resulting experiences and attitudes are generally biased accordingly. (p. 298)

Since the adolescent is the major focus in this study, another issue requires examination. Psychological problems often emerge in adolescence. Le Dain's (1973) analysis estimates 10-30% of adolescents experience temporary or long-lasting psychological disorders or adjustment problems. A previous study of mental health in Alberta (Blair, 1968) has presented similar estimates. In order that an hypothesis of drug related harm be tenable, the harm would require demonstration in a greater proportion of adolescents than would be expected without the non-medical drug use. Even then, attaching a causation explanation to the phenomena would be tenuous for reasons presented above.

These difficulties in interpreting the literature have been reflected in the presentation form of prominent reviews. Kalant and Kalant (1971) discuss psychological effects of non-medical drug use under a heading of "Psychological

Consequences of Chronic Drug Use" (p. 72). The authors repeatedly emphasized that the consequences could be verified in heavy users but not under conditions of lesser drug use. Kalant's (1975) presentation to the Senate subcommittee on marijuana legislation took a similar view and was endorsed by nine prominent scientists. Le Dain (1973) discussed psychological effects in Appendix A. These discussions concentrated on the subjective effects of general use and some limited consideration of undesirable psychological consequences from heavy drug use. More extensive consideration of psychological concomitants of non-medical drug use was reserved for discussion of motivations in Appendix D. Even in this organization Le Dain (1973) repeatedly emphasized the difficulty in determining cause-effect relation. The Braucht, Brakarsh, Follingstad, and Berry (1973) review referred to psychological correlates of non-medical drug use. Evidence for adverse psychological conditions was also derived almost exclusively from clinical case studies. Goode (1972) has gone to considerable length to argue that the meaning of psychological dependence and psychopathological diagnosis attributed to non-medical drug use are of questionable reliability and validity. Brecher (1972) has also chosen to discuss adverse psychological consequences in relation to

heavy users rather than general users.

Taking these extensive cautions and qualifications into consideration, the nature of adverse psychological consequences may be examined.

Organically derived psychological complications. The most obvious and least debatable adverse psychological consequence of non-medical drug use is that attributed to organic brain damage. For the most part, such damage is considered irreversible and results in a reasonably stable and identifiable range of symptoms. This type of damage is well known in chronic alcoholism (Brecher, 1972; Kalant & Kalant, 1971; Le Dain, 1973). Neurological complications of alcoholism appear to be closely related to the typical nutritional deficiencies in this condition although alcohol may have direct and irreversible damaging effects on neural tissue itself (Le Dain, 1973). Symptoms of this brain damage have been described in a variety of terms but include memory loss, learning deficit, thought impairment, clouding of consciousness, disorientation, hallucinations, rigidity of the limbs and uncontrollable reflexes.[9] Some evidence

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[9] An overlap between irreversible and reversible conditions is acknowledged. Complete separation is not possible.

suggests similar conditions of organic origin in some heavy chronic users of cannabis and LSD (see Kalant & Kalant, 1971; Le Dain, 1973). As such, these effects cannot be attributed to more than a very small proportion of users. Insufficient study has been made of other hallucinogens to make any useful comment. Kalant (1975) has referred to evidence of permanent learning and memory deficits in rat studies but has carefully identified these effects with use involvement comparable to out of the ordinary heavy use in humans. Contrary to conventional wisdom no organic neurological damage has been identified in heroin or other narcotics use (Einstein, 1975; Le Dain, 1973). Barbiturates, minor tranquilizers, and other sedative hypnotics, although closely related to alcohol, are also not associated with this type of damage even in chronic use. Although amphetamines and cocaine have been identified with a number of adverse effects, little empirical data have been found confirming organic damage in chronic amphetamine use (Brecher, 1972; Le Dain, 1973).

Volatile substances form a very large category including solvents and glues. Again, the popular belief that permanent brain damage results from sniffing glue is not supported by the scientific literature (Brecher, 1972; Le Dain, 1973). Brecher (1972) has traced the non-scientific origin of this

common belief. Some evidence suggests that certain industrial solvents may cause irreversible brain damage after prolonged exposure (Le Dain, 1973). Such evidence is based on exposures far exceeding that with intentional non-medical use.

Acute and chronic psychological complications. Psychological complications arising from acute intoxication or other short duration drug use is most difficult to define. Previous discussion on vague terminology and value derived perceptions especially apply here. Whether or not a particular effect is undesirable or not is open to debate. Context is also important, but generally has not been considered in the literature. For example, therapeutic LSD use has been shown to have extremely low incidence of undesirable consequences. Although part of this effect may be due to the controlled and "safe" context of the clinical situation (Le Dain, 1973), clinical interpretation of effects in positive terms may play an equally important role (Brecher, 1972). Since temporary discomforts have been excluded under the present problem conceptions, emphasis has been placed on the more profound psychological effects of acute intoxications.

The hallucinogenics are the most controversial with respect to identifying undesirable consequences. The

contradictory interpretations are in part due to the fact that both sought after and unsought after effects of these drugs are identified with various forms of mental illness. However, from the point of view of the user, two types of adverse experiences have been identified (Le Dain, 1973). As Le Dain (1973) noted, similarities occur between different hallucinogenic drugs, although the LSD experience has been better documented than the others. LSD is generally considered the most intense of the common drugs in this class, thereby permitting the most extreme bound to be explored. Adverse reactions from other common hallucinogens would be expected to be of lesser intensity. The first type of adverse reaction described by Le Dain (1973) is the psychotic break or "freak out". This condition is characterized by an intense negative experience of fear or terror to the point of panic, loss of emotional control, paranoid delusions, hallucinations, catatonia, and depression. This state is usually of short duration. The non-psychotic reaction is of lesser intensity. Symptoms include varying degrees of tension, anxiety, fear, unpleasant illusions, and depressions reality contact is greater than that found in the psychotic reaction. Colloquial description of this occurrence includes "bad trip" or "bummer". Although psychotic adverse reactions would

unquestionably be an undesirable consequence under the terms presented in the present problem conception, the non-psychotic reaction may represent little more than temporary discomfort. Some estimate of magnitude may be offerred on the freakouts and bummers. According to Fort (1969) the less adverse reactions may occur in the order of one per thousand "trips". Evidence presented by Brecher (1972) supports Fort's estimate. It is well established that the inexperienced user is at greater risk of experiencing those effects. Brecher (1972), Le Dain (1973), and Wells (1973) referred to the scarcity of such adverse effects under clinically controlled conditions. It has also been well established that the apparent decrease in visibility of hallucinogenic users has been in part due to improved skill of the users in controlling their experience. The more serious reactions have been estimated by Fort (1969) to occur no more than about one in ten thousand to one in one hundred thousand drug experiences. In a Toronto area study (Smart et al., 1972) a different estimate was reported. Among a sample of high school LSD users, 53% reported having experienced unpleasant effects or a "bad trip" of some kind. Of course, this was a much broader criterion than used by Fort (1969) or the problem conception under consideration.

Another researcher reported 24 "freakouts" in 601 "acid trips" (Solursh, 1969).

The "flashback" is another condition that has aroused concern. The flashback is a recurrence of hallucinogenic experiences of varying duration and intensity without the re-ingestion of the drug. According to Le Dain's (1973) analysis, the flashback phenomena has been reported over periods of up to more than a year after the last LSD use. Duration of these experiences typically last a few minutes or less. A popular opinion of these flashbacks suggests that they are involuntary and terrifying experiences. However, this is not necessarily so. Keeler, Reifler, and Liptzin (1968) have pointed out that the recurrence of a drug-like effect should not be classified as an adverse experience unless it precipitates anxiety or interferes with function. According to Brecher's (1972) analysis, drug induced flashback may not be qualitatively or quantitatively different than the common non-drug reminiscences of significant events experienced by most people. Estimates of occurrence of this phenomena are difficult to derive. However, Smart et al. (1972) found 60% of high school LSD users reported flashbacks of some kind. How many of these were considered adverse is unknown. Another researcher (Horowitz, 1969)

estimated about 5% of repeated hallucinogen users had experienced intrusions of frightening images despite attempts to avoid them.

Le Dain (1973) has presented evidence that chronic hallucinogen use may be implicated in a variety of psychological problems of a prolonged nature. There is some difference of opinion whether these are found primarily in persons predisposed to psychotic reaction (that is, the hallucinogenic acting only in a precipitator role) or previously psychopathic. It is likely that both conditions have occurred. Some reports have described psychotic reactions from chronic use in individuals without prior psychopathology. In any event, these occurrences would be relatively rare considering the small proportion of persons that become chronic users (Brecher, 1972; Wells, 1973). One further consideration is to be made before leaving hallucinogenic drugs. Le Dain (1973) has discussed the common supposition that chronic hallucinogenic use may cause prolonged disruption of cognitive functioning (and school performance). Whereas poor academic records have been found with heavy users of hallucinogens and related drugs, the pattern typically holds for all drugs including alcohol and tobacco (nicotine). According to Le Dain's (1973) analysis this is

unlikely to be a pharmacological effect.

Determining adverse psychological effects of amphetamines and like drugs is relatively straight forward. Adverse effects of these drugs are uncommon in moderate use even over prolonged periods. However, the following psychological effects may be noted even at the moderate levels: irritation, inability to concentrate, restlessness, anxiety, confusion, and depersonalization (Brecher, 1972; Le Dain, 1973). At higher doses and/or chronic use adverse psychological symptoms become prominent and predictable. Irritability, restlessness, and aggression are likely to occur. Other symptoms described are self-consciousness, suspiciousness, fear, hallucinations, and delusions (Le Dain, 1973). Hallucinations may be combined with medical effects to give the impression (to the user) that insects or worms are crawling beneath the skin (Brecher, 1972). With almost complete certainty heavy intravenous amphetamine use results in acute psychosis which is almost indistinguishable from paranoid schizophrenia (Brecher, 1972). Feelings of persecution, aggression, irritation, and suspicions become intense. This condition, however, dissipates with discontinued use of the drug. Apparently recovery from the adverse psychological effects of heavy amphetamine use is complete, but might

require 6 to 12 months (Kramer, Fischman, & Littlefield, 1967). (A similar phenomenon may be noted with cocaine use, although this is extremely rare due to unavailability and high cost of that drug.) Although estimates are not available for non-intravenous use, adverse psychological effects beyond temporary discomfort would be uncommon. Le Dain (1973) estimated about two to three thousand chronic high dose users and about 3,500 to 4,500 irregular high dose users for the 1970 summer when such use was presumed to have reached a peak. Thereafter the number of users fell dramatically. Since the psychotic reaction is associated with high dose intravenous users, the proportion suffering this adverse reaction would be very small.

Contrary to popular belief, adverse psychological effects of opiate narcotic use (principally heroin) are rare. Einstein (1975) has observed "Given our present state of knowledge, there are no psychiatric conditions that are directly caused by heroin" (p. 40). Descriptions of drowsiness, dizziness, inability to concentrate, mental clouding, apathy, and lethargy have been described; however it would be difficult to convince the user that these would be particularly adverse. Le Dain (1973) has summed up by stating

> There is no evidence of permanent change in cognitive or intellectual functioning due to opiate use. Nor is there any indication of psychosis or other major psychiatric complications caused by these drugs. (p. 309)

Because alcohol is a sanctioned drug for non-medical use, consensus on adverse effects is easier to obtain. The mental confusion, dizziness, and judgment impairment associated with alcohol use are considered adverse primarily if they occur at inopportune times or places. Therefore in determining adverse psychological effects, not only the state must be considered but also the circumstances. This does not generally apply to the non-sanctioned drugs since all circumstances of non-medical use are considered unacceptable. Aggression is almost always deemed an undesirable effect both by the user (in retrospect) and the observer. Reference has been made to organic brain damage from chronic alcohol use which results in a psychopathological state. Examining all of those conditions together, they are identified primarily with the alcoholic. Estimates of problem and alcoholic alcohol users are reasonably consensual. Brecher (1972) has estimated 10 to 12% of drinkers fall in these two categories. Le Dain (1973) has used the range from two to five percent of users being alcoholic and perhaps another

four to ten percent being problem users. Barbiturate use may result in effects very similar to alcohol use except there is no evidence of organic damage. To some extent tranquilizers and other sedative hypnotics would be considered similarly. Although prevalence of adverse psychological effects are difficult to estimate, there is no reason to expect proportions to be any greater than for alcohol use. Since numbers of users are very small compared to alcohol users, those suffering adverse psychological effects from barbiturates, tranquilizers, and other sedative hypnotics would constitute a small number of persons.

Little information is available on the psychological consequences of the non-medical use of volatile substances. In some ways intoxication by gasoline, glues, or solvents is similar to those produced by alcohol. During acute intoxication, there may be confusion, dizziness, impaired judgment, irritability, tenseness, and even acute psychosis. Although little is known about the frequency of these occurrences a few reliable reports have been noted by Brecher (1972). Considering the prevalence of this activity in adolescence there appears to be few manifest psychological disturbances especially of a lasting variety. Le Dain (1973) has noted that there is no evidence of long term psychotic reactions.

Although psychological harm from volatile substance use may go unnoticed (or unattributed to the substances), there is no reason to expect such damage is frequent.

Concern for the unknown. There is a real concern that unrecognized psychological effects of drug use exist which are potentially harmful. Cohen (quoted in Le Dain, 1973) presented this view to a Senate subcommittee on juvenile delinquency.

> Those involved in the 'downer' scene . . . will sustain a significant defect in their personality development. They will have spent long periods during their maturation evading with chemicals the very elements of existence which promotes human growth: the frustration, problems and stress of daily life. It is this aspect of bedrugged adolescence which is particularly tragic - the loss of opportunity to grow up psychologically. (p. 419)

Cohen's statement refers to preoccupied use of 'downers' for the purpose of escape from "frustration, problems, and stress." This type of reasoning need not be limited to the use of downers nor to drugs for that matter. In so far as escape may be considered undesirable or maladaptive, there is no reason to doubt Cohen's opinion even in the absence of empirical verification. However, users meeting the stated criteria (preoccupation, and for escape from) cannot constitute more than a small proportion of users in general. (Recall

preceding discussions on continuum of use and involvement.)

Nahas (1973) made a similar judgment on marijuana use.

> Cannabis intoxication will have most serious adverse effects in adolescents (13 to 18 years old) who are attempting to structure their personalities in the world around them when their vulnerable brains are in the process of integration. (p. 249)

The Nahas statement fails to qualify the conjectured adverse effects of cannabis intoxication in terms of amount. He has not indicated whether the adverse effects apply to the large number of cannabis users who are minimally or moderately involved or to the small proportion of users who are heavily involved (or preoccupied). Empirical verification is not possible. However, on the basis of information presented elsewhere in this study, Nahas' opinion is untenable for the majority of users. As with the Cohen statement, the possibility remains that the postulated adverse effects might apply to users at the heavy (or preoccupied) use end of the continuum. Even so, the nature of these effects (if any) remains indeterminant and neither observer has offerred more than vague reference.

Social/Legal Aspects

From the societal point of view, undesirable consequences from non-medical drug use are numerous and profound. The

usual interpretation of costs to society include: loss of productivity, crime associated with supply and support, accidents, adverse psychological and medical effects (both intrapersonal and interpersonal), and costs of supplying treatment, rehabilitation, enforcement, and prevention services. On both humanistic and economic grounds these consequences have given rise to much concern. But what about the apparent contradictions of observers like Blum (1972) who do not consider non-medical drug use per se much of a social problem? Society has tended to view the problems in terms where focus is directed to the overall magnitude of the problem. These concerns include numbers of users, numbers of dependent users, accidents, deaths, medical or psychological damage, total costs of treatment, rehabilitation, and law enforcement. The Canadian government reports on non-medical drug use (Le Dain, 1972, 1973) represent this overall focus. But the Blum (1972) position is based on a different perspective of the same situation. Most drug users neither cause nor experience social problems. Social problems are disproportionately associated with a small proportion of users. Hence, the Blum (1972) position is reconcilable with the societal point of view. However, many observers often attempt to project the societal perspective on to the users

perspective. This is most clearly illustrated in relation to attitudes toward alcohol use. Alcohol use per se is not a social problem. Excessive alcohol use and situationally inappropriate alcohol use (e.g. impaired driving) is a major social problem. Although few persons attempt to attribute alcohol related problems to all alcohol use, many observers tend to view non-sanctioned drug use in this manner. The undesirable consequences = problem conception has been delimited to the user's perspective for reasons previously discussed. Therefore, social consequences of non-medical drug use occur whenever the user is brought into conflict with society. This may include the informal expectations where the user may come into conflict with the family, school, or community, or the formal system of expectations under the legal framework.

Informal Social Complications

Relatively little information is available on personal-social complications of non-sanctioned drug use not discussed in other sections. There are occurrences of related family conflict, social ostracism, scholastic conflicts, or other complications. However, with the possible exception of the amotivational syndrome, information is generally lacking. The so-called amotivational syndrome offers one of the clearer

examples of problems arising out of the drug user's interaction with society. Although the condition has been attributed primarily to the use of cannabis, it has also been attributed to other forms of non-sanctioned drug use. The amotivational syndrome is characterized by "apathy, loss of effectiveness, and diminished capacity or willingness to carry out complex long-term plans, endure frustration, concentrate for long periods, follow routines or successfully master new material" (McGlothlin & West, 1968, p. 372). These characteristics are determined in relation to conventional societal ideals. The McGlothlin and West observations have been based on clinical observations. Similar findings have been reported in the extensive Le Dain (1972) review. Le Dain (1972) noted the amotivational syndrome has been attributed to chronic use (p. 67 and 159) or chronic excessive use (p. 74) or chronic heavy use (p. 83, 100, and 150). Attempts to demonstrate the syndrome in non-clinical cases has not met with success (Goode, 1972). Without denying the possibility that preoccupying drug use may compromise motivation toward conventional values, the amotivational syndrome cannot apply to the majority of users. Chronic, chronic-excessive, or chronic heavy users constitute a small proportion of those who use drugs (recalling the log normal relationship).

It is interesting to note that the characteristics described for the amotivational syndrome may be equally applied to alcohol use. One does not, however, see this acknowledgement in the literature, perhaps because of alcohol's sanctioned status. Even so, observers would not attribute an amotivational syndrome to all alcohol use. Rather, it could be attributed only to the types of involved use referred to as alcoholic (about three to five percent of alcohol users). Other social complications are better known with alcohol than with the non-sanctioned drugs. Alcoholism and problem alcohol use have been credited with marital breakdown, other family conflict, financial crises, job deterioration, job loss, and other interpersonal conflicts. It has been estimated that the alcoholic seriously and adversely affects from six to eight other people (Strachan, 1975). Some estimates are as high as twelve. The estimation of magnitude of those users causing or experiencing such problems is straight forward. This is restricted to two to five percent of those who drink and are considered alcoholic as well as to the four to ten percent of drinkers considered problem users (Le Dain, 1973).

Formal Social Complications--The Legal Framework

Preliminary considerations. Society has declared certain

drugs illegal under various conditions of production, distribution, possession, and use. Contrary to what many observers believe, the legal structure governing non-medically used drugs is neither clear nor consistent. As Cornacchia et al. (1973) have observed:

> The legality of drug use is a factor that cuts through this complex issue of drugs without clarifying any crucial points or distinguishing between drugs on the basis of abuse potential. It is simply a fact of legislation that some drugs are outlawed and some are not. (p. 30)

Le Dain (1973), Kalant and Kalant (1971), Fort (1969), Goode (1972), and Brecher (1972) have discussed this at length.

Many pieces of legislation apply directly or indirectly to the production, distribution, possession, and use of drugs for non-medical purposes. The interaction of these laws can be complex, and a presentation of these complexities is beyond the scope of this study. However, for purposes of problem identification as related to drug education in schools, the basic framework of legal control is reasonably clear.

The following considerations are oriented primarily to the user. It is acknowledged that numerous legal problems are associated with the illegal traffic. Bearing in mind that prevention programs are primarily concerned with the user (or prospective user), this focus and the issues

generated are of concern.

The legal structure. The Narcotic Control Act (federal) applies to opiate narcotics (including methadone), cocaine, cannabis (in all its forms), and phencyclidine (PCP).[10] Except for small amounts of codeine, possession of these drugs is not allowed unless under authorization of the Minister of National Health and Welfare. Individual users may possess these drugs only through prescription by duly licensed medical practitioners. (Cannabis is not available for medical use.) Special licensing may also make these drugs available for research, identification, and analysis. Possession of these drugs (except small amounts of codeine) for any purpose not duly authorized is illegal. Manufacture, cultivation (opium poppy, cannabis), import, export, transport, selling, giving, etc. are also illegal.

The Food and Drug Act (federal) and Food and Drug Regulations (federal) cover a variety of drugs that have been used non-medically. Part III of the Act designates certain drugs as "controlled." Controlled drugs include

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10 It should be noted that the legal definition of a narcotic is inconsistent with pharmacological meaning. Pharmacologically, cannabis is a mild euphoriant, cocaine is a stimulant, and phencyclidine is a tranquilizer.

amphetamine, barbituric acid and its derivatives, benzphetamine, methamphetamine, pentazocaine, methaqualone, phendimetrazine, and their respective salts. Schedule F of the Regulations lists other drugs that are under similar controls to the Part III drugs. These include various sedatives, tranquilizers, stimulants, analgesics, mescaline, and other substances. Trafficking and possession for trafficking under Part III and Schedule F drugs is an offense, however there is no offense for simple possession. This means that if the user maintains his/her supply below that which might be considered possession for trafficking, legal sanctions do not apply. It is also noted that the purchaser in an illegal transaction of these drugs is not committing an offense even though the seller is. Part IV of the Food and Drug Act deals with drugs that are designated "restricted". These include most of the prominent hallucinogens, namely, LSD, DET, DMT, MDA, MMDA, LBJ, harmaline, Harmadol, STP (DOM), and various forms of dimethoxyamphetamine. Trafficking, possession for trafficking, and simple possession of these are illegal. As with drugs contained under the Narcotic Control Act, special licensing may make Part IV drugs available for research, identification, and analysis.

There exists an indeterminately large number of volatile

substances legally available that can be used to achieve a state of intoxication. These include gasoline, kerosene, glues, paints, lighter fluid, lacquers, dry cleaning fluid, aerosol sprays, and nail polish removers (Le Dain, 1973). All of these substances are legally available to anyone regardless of age or condition. No federal legislation exists to prohibit the possession or use of these substances for the purpose of intoxification. The Public Health Act of Alberta is the only provincial legislation that has attempted to regulate the non-medical use of volatile substances. It states "no person shall use any intoxicating vapour to produce intoxication" (Subsection 40). Also prohibited is assisting or inducing anotherperson to do so or selling a product for such purpose.

The Juvenile Delinquents Act (federal) requires consideration since much non-medical drug use has been associated with persons under the age of majority.[11] This act states that the juvenile person is subject to all federal, provincial, and municipal laws plus whatever the courts may

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[11] The age of majority varies between provinces from 16 years to 18 years. In Alberta, a differential exists between males and females which is 16 years and 18 years respectively.

determine is "sexual immorality or any similar form of vice" (Subsection 2(1)). A corresponding act in the United States has been used to prosecute juveniles engaging in solvent inhalation (Brecher, 1972). Similarly, Canadian courts have tested the applicability of the phrase "any similar form of vice" to juvenile non-medical drug use not otherwise prohibited by law. However a 1967 decision by the Alberta Supreme Court has ruled that glue sniffing did not come under these terms (as reported by Le Dain, 1973, p. 965). According to Le Dain (1973), other forms of non-medical drug use not specifically prohibited by law are also unlikely to bring a person within the definition of a juvenile delinquent. Allowing that precedents are subject to reinterpretation, the Canadian position appears to be that non-medical drug use not otherwise prohibited by law, is not an offense by the juvenile person. The implication of this is important since the juvenile may also engage in a wide variety of non-medical use with legal impunity.

With the exception of alcohol legislation (which is considered below), the foregoing acts provide the superstructure of legislative attempts to regulate non-medical drug supply, possession, and use. Other brief mention of these is in order. The Tobacco Restraint Act (federal)

regulates aspects of tobacco products distribution. Sale of tobacco to persons under 16 years of age is prohibited. It is also an offense for anyone under 16 years to purchase, possess, smoke, or chew tobacco in a street or public place. Penalties are light and seldom are offenders prosecuted. Customs and Excise Acts (federal) provide for regulation and taxation of tobacco and alcohol. Section 234 of the Highway Traffic Act (Alberta) makes it an offense to operate a motor vehicle while impaired by alcohol or drug (any drug).

Alcohol (that is, beverage or ethyl alcohol) requires special and separate consideration since the legal structure has evolved differently from the other drugs of concern. In fact, alcohol is not considered a drug by legal definition. (Workers in the field unanimously consider alcohol a drug.) Under the Food and Drug Regulations (federal) alcohol is considered a food. (The word alcohol is not even contained within the Food and Drug Act.) Legislative concern at the federal level is oriented to restrictions on production, quality control, distribution, and taxation. This is accomplished through the Food and Drug Act (and Regulations), Customs Act, and Excise Act. Other types of control are deferred to provincial legislation. In Alberta, three acts form the major control structure, namely, the Liquor Control

Act, Liquor Licensing Act, and Liquor Plebiscites Act. These regulate licensing of liquor outlets, hours of operation, service to intoxicated persons, age restrictions (18 years for both sexes in Alberta), public drunkeness, interdicts, etc. In addition, the Highway Traffic Act (Alberta) prohibits operation of a motor vehicle with blood alcohol level .08% or over (section 236), or impairment by alcohol or drug (section 234), or refusal to take a breath test when requested to do so by a peace officer (section 235). Similar legislated restrictions apply in other provinces.

Complications introduced by the legal structure. Caution is indicated in viewing the legal implications of non-medical drug use. Reference in the literature is often made to illegal or illicit drug use. Even though illicit can have broader meaning, it has been used primarily as a synonym for illegal. The impression is often given in drug education programming, that we are exclusively concerned with drug use prohibited by law. Even in instances where the use of these terms may be technically correct, they can mislead on three accounts. First, most of the literature on the subject originates from the United States. Significant differences in the laws directed at non-medical drug use exist between Canada and the United States. For example, psilocybin is

not illegal in Canada, but is illegal in the United States. Simple possession of amphetamine is illegal in the United States but not in Canada. A second point is that drug use per se is not illegal under the Narcotic Control Act (federal) or Food and Drug Act (federal). Although there is no doubt that the laws have been created to prevent non-medical use, it is possession that is not permitted under the Narcotic Control Act and Part IV of the Food and Drug Act. (A trafficking offense does not require possession.) Use per se is an offense only for solvents and inhalents under the Public Health Act (Alberta) and Tobacco Restraint Act (federal) for persons under 16 years of age in a public place. Lastly, many substances that are of concern because of non-medical use are not prohibited by law.

Although many observers prefer to assume the drug problem is congruent with legal sanctions, this is not so.[12]

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[12] Cornacchia et al. (1973) have observed that some legal drugs may be considered illegal because they are obtainable and sold through illegal channels. Although this may be so, only part of the discrepancy would be corrected. Solvents, mushroom derived psychogenics (for example, psilocybin), many plant derived substances (for example, morning glory seeds, nutmeg), and prescription supplied but non-medically used drugs (for example, tranquilizers) still would be outside the broader legal-illegal conceptions. Even when otherwise legal drugs are obtained illegally the <u>buyer</u> is not committing an offense, therefore may do so with legal impunity under conditions imposed by the legal framework.

Furthermore, it has been often assumed that the laws have been created with sensitivity to the harm potential of each drug. It also is commonly assumed that penalties for violation relate to the seriousness of the offense. Herein lies some of the greatest inconsistencies. Laws do not consistently apply to harm potential of the drugs. Rather the laws derive from reactions to vaguely perceived problem situations and reflections of moral censure (Brecher, 1972; Fort, 1969; Goode, 1972, 1973). Although society is under no obligation to defend its moral and value decisions by a logic system, there have been continuing attempts to justify the laws on the basis of scientific logic. As Good (1972) pointed out "we not only want to be morally right, whatever that might entail; we also want to be empirically and scientifically correct" (p. 12).

Psychoactive drugs outside legal control. There are a large number of substances that are capable of altering consciousness. Those subject to legal restriction comprise only a limited proportion of these. In the previous section reference was made to specific substances under minimal legal control or not under legal control. This list can be expanded with readily available substances known to be of interest for non-medical use. In all probability the list

will continue to grow. A limited number of these substances have been described. Morning glory seeds and wood rose seeds contain substances similar in chemical structure and effect to the illegal lysergic acid diethylamide. These substances are d-lysergic acid and lysergic acid monethylamide respectively. The common spices, nutmeg and mace contain a substance or substances capable of distorting perception of time and space and producing hallucinations. The fly agaric, a mushroom common in north temperate zones of America and Eurasia, has properties that produce hallucinations, euphoria, good humor, macroscopia, and other effects of non-medical interest. Northern Canadian Indians probably originated the use of the flag root, rat root, or sweet calomel for its medicinal and stimulant properties. The active ingredient, asarone and B-asarone are also known to produce visual hallucinations in larger doses. References to these and other psychoactive substances are found in Leavitt (1974) and Shultes (1970).

Estimating magnitude. In terms of strict legal orientation, all drug violations constitute a problem. Estimating violations is straight forward. The offense of simple possession or use is virtually the same as those presented for the incidence = problem concept but restricted to those

substances prohibited by law. What these statistics present is the number or percent of persons in violation of the law. Information regarding degree of violation is only vaguely presented in some studies. Drug possession (simple) or use not prohibited by law is not part of the legal problem unless influences of the drug state brings that person in conflict with other laws, for example, operating a motor vehicle while intoxicated with alcohol or other drug.

Considering legal aspects of the problem in terms of undesirable consequences experienced by the user, the picture changes significantly. As Le Dain (1973) found:

> The effectiveness of law enforcement against use varies somewhat as between the different kinds of drug use, but in the case of cannabis and the strong hallucinogens it would appear that less than one percent of a reasonable estimate of the total number who have ever used are convicted each year, and the proportion is not much higher in the case of opiate narcotics. What this means is that the actual risk of apprehension, which is the essential basis of deterrence, is not very great. (p. 54)

It is easily demonstrable that few of those who engage in illegal drug possession (simple) or illegal use of drugs suffer legal repercussions. The attempt that various authors have made to convey the opposite in the name of drug education is clearly in error. Houser (1969) has attempted to do

this by stating:

> THE LAW IS CLEAR,
> THE PENALTIES ARE SEVERE,
> THE ODDS ARE POOR,
> BUT
> THE CHOICE IS YOURS!
> (p. 39)

Henderson (1974), Gorodetsky and Christian (1971), and the Bureau of Narcotics and Dangerous Drugs (1970) have given similar impressions. As Le Dain (1973) has pointed out, the probability of repercussion for possession of drugs so prohibited is low. It should also be noted that the probability of legitimate arrest for simple possession (and use) of amphetamines, barbiturates, tranquilizers, sedative hypnotics, psilocybin (and other mushroom derived substances), plus other less common substances (as in wood rose seeds, morning glory seeds, etc.) is zero. As for alcohol driving offenses, police also acknowledge that only a small portion of those committing the offense are ever apprehended (Le Dain, 1973). As can be seen with other social and psychological liabilities of non-medical use, most non-medical drug use does not result in legal consequences of significant proportion or visibility.

Medical/Physiological Aspects

Various kinds of medical/physiological damage have been attributed to non-medical drug use. As found with both

psychological and legal warnings, medical complications have been bolstered by the imagination of prohibitionists. In the not too distant past, temperance lecturers used to drop a worm in pure alcohol (Fort, 1969). As the creature shrivelled and died, the audience was informed that a similar fate would befall their brains if they drank alcohol. Of course, our greater sophistication today would meet this display with skepticism. However, much "evidence" presented today may be as questionable. For instances, Le Dain (1972) found over 2,000 technical publications on cannabis in the literature, few of which could meet "modern standards of scientific investigation" (p. 15). The majority were poorly documented, ambiguous, emotionally laden, and strongly biased. Slavin (1971) referred to the "objective negativism" in the drug literature, meaning that research has often been premised on the assumption that non-sanctioned drug use is harmful and the research initiated to find out what it is that is harmful. Police, parents, teachers, and entreprenuers have informed children that marijuana would destroy their brains, or that LSD (and now marijuana) would break their chromosomes which would lead to terrible birth defects in their children or that "speed kills", or that heroin enslaves with the first use. A Pennsylvania State Commission for the

Blind reported a story which received nation wide front-page news coverage (Fort, 1969; Le Dain, 1973; Wells, 1973). According to that official's "facts", six college students under the influence of LSD had become blinded by staring into the sun. Later, under pressure, the State governor publically admitted the story had been intentionally fabricated. The Commissioner had been unsatisfied with verifiable dangers of the substance and made up the story--complete with falsification of the students' records. The retraction received obscure coverage. The credibility of the American Medical Association has been used to dignify a similar falsification. Dr. Hall, a former president of the Association, claimed marijuana use would impair the sexual performance of a 35 year old to that characteristic of a 70 year old. Dr. Hall also stated that chronic use causes birth defects (Tennant and Prendergast, 1971). When challenged on the statements, Dr. Hall later retracted them admitting that he possessed no empirical evidence and that his intention was to reduce marijuana use--regardless of the facts (San Francisco Chronicle, 1971). The question of credibility repeatedly arises in the literature.

Heroin (and other opiate narcotics) is the most feared drug in popular opinion. However, given our present

knowledge "the vast majority of medical consequences associated with its use either result from the manner in which it is used or the kind of life the user is living" (Einstein, 1975, p. 40). About the only direct medical complication of chronic heroin use is persistent constipation, nausea, and periodic vomiting (Le Dain, 1973). The latter two conditions may also accompany casual use. Although available evidence does not implicate direct permanent damage from chronic use of the pure opiate narcotics, numerous complications may be observed if the use pattern includes adulterated samples, unsterile needles, unhygenic living conditions, poor nutrition, and inadequate medical care (Brecher, 1972; Einstein, 1975; Fort, 1969; Leavitt, 1974; Le Dain, 1973). Medical conditions arising from unhygenic use may include; serum hepatitis, skin infections, abscesses of the skin and internal organs, fungus diseases of the skin, staphylcoccal infections, tetanus, endocarditis, thrombophebitis, bacteremia, or septicemia. As Einstein (1975) has pointed out, if the heroin user insists on using the drug and does so under sterile conditions, neither he/she nor the community would suffer from these medical problems. Life-style complications include greater than normal incidence of violent death, venereal disease, pneumonia, tuberculosis, and bronchial

asthma. Medical complications from adulterants in the drug may include venous sclerosis, pulmonary hypertension, cardiac failure, ambolic pneumonia, or pulmonary fibrosis (Einstein, 1975). These complications are due primarily to the introduction of particulate matter into the blood stream. Estimating the incidence of these conditions in the user population is difficult since there are little valid data. However, since these complications are most prominent in the chronic intravenous user, an estimate of this type of user compared to the non-chronic user may be used as a rough index.

It is commonly believed that very few persons can use heroin on an occasional basis without becoming addicted. If this was so, the proportion of users in the high risk category would be very high. However, the World Health Organization (1974) Expert Committee on Drug Dependence has judged "many" persons take opiate type drugs on an occasional basis without becoming dependent. Dole and Nyswander (1976) estimated approximately 400,000 to 600,000 daily heroin users in the United States with perhaps another 5,000,000 having used some quantity within the previous year. This ratio would be almost one daily user to ten occasional users. In Canada, Le Dain's (1973) estimate for 1972 was approximately 15,000 daily heroin users with another 50,000

occasional users. The difference in these estimates is probably due to Dole and Nyswander (1976) considering any use and Le Dain (1973) considering occasional use. Two other medical complications have been attributed to heroin use, namely, withdrawal distress and overdose death. Contrary to popular belief and Hollywood stereotype, abrupt withdrawal from opiate narcotic addiction is neither particularly dramatic nor life-threatening (Brecher, 1972; Fort, 1969; Le Dain, 1973). Symptoms of such withdrawal tend toward those accompanying a mild to moderate flu. Death due to heroin overdose is also rarer than commonly believed. Although death rate due to complications arising from heroin addiction is greater than normal mortality, it is unlikely that most deaths so attributed have been due to actual overdose (Baden, 1969; Brecher, 1972; Leavitt, 1974; Le Dain, 1973). According to figures presented by Le Dain (1973), opiate narcotics related death in Canada would number two to three hundred per year. This is less than two percent of all daily users and a fraction of a percent of all users.

Alcohol is probably the most dramatic example of a non-medically used drug in which popular opinion tends to underestimate associated medical problems. Le Dain (1973) has identified alcohol use as unquestionably, Canada's most

serious drug problem. "One can literally go from the head to the toes and point out serious toxic effects related to excessive drinking" (Einstein, 1975, p. 77). These effects are due to the direct toxic effects of alcohol with the added complications of nutritional deficiencies common in excessive users. These medical conditions include: Wernicke's syndrome--ataxia, mental confusion, ocular abnormalities (reversible); Korsakoff's syndrome--brain damaged psychoticism (irreversible); tobacco-alcohol amblyapia--blindness (reversible); Wernicke's opthalmoplegia--eye muscle paralysis (reversible); cancer of the pharynix--a complication with smoking; esophageal varices (irreversible); alcoholic cardimyopathy (reversible in early stages); tuberculosis, pneumonia, emphysema--higher in alcoholics; cirrhosis (irreversible) and inflammation of the liver (acute); hypersplenism (reversible); gastritis and ulcers (reversible in early stages); acute and chronic pancreatis; hemorrhoids; atrophy of the testes (irreversible); polyneuritis (reversible), myopathy--painful muscle contractions (reversible); and blood coagulation defects and anemia (reversible) (Einstein, 1975). One or more of these conditions may be expected in the alcoholic user which comprises between two and five percent of alcohol users (Le Dain, 1973). Lesser frequency

and intensity of these conditions may be found in the problem drinker group which contribute another four to ten percent of alcohol users (Le Dain, 1973). According to the World Health Organization (1974), the ingestion of over 150 ml of absolute alcohol per day over a protracted period significantly increases the probability of alcohol related problems. Death due to overdose of alcohol does occur. Figures presented by Le Dain (1973) permit an estimate of alcohol related deaths (excluding accidents) between one and two thousand per year in Canada. This is likely an underestimate. Researchers at the Ontario Addiction Research Foundation have estimated 6,000 deaths in excess of expected mortality (Schmidt & de Lint, 1971). Abrupt withdrawal of alcohol from the alcoholic can be as dramatic and life threatening as that erroneously attributed to heroin withdrawal. As many as ten percent of those undergoing unassisted withdrawal may be expected to die (Le Dain, 1973). Alcohol use, both acute and chronic, is related to violence, accidents, suicides, and crime. These however, are primarily associated with chronic and problem users. Alcohol has been implicated in as many as fifty percent of fatal traffic accidents (Le Dain, 1973). This has led to the popular opinion that intoxicated drivers have a high probability of being

involved in accidents. However, it would be more accurate to say they have a higher probability of accident than unimpaired drivers. Le Dain (1973) has estimated over 50% of adults drive automobiles after drinking (not all of which would be above legal limits). Although reliable estimates are not available, few drinking drivers are actually involved in accidents.

Barbiturates are relatively free from severe side effects (Leavitt, 1974). The sought after effects of these drugs are so similar to alcohol that one observer has referred to barbiturates as solid alcohol (Brecher, 1972). Fortunately, the long list of direct medical complications applying to alcohol do not apply to non-medical barbiturate use. Acute intoxications may result in jaundice, respiratory complications, kidney dysfunctions, or skin reactions. However, relatively complete recovery would be expected (Le Dain, 1973). Barbiturates are also associated with accidental injury because of the decrease in motor competency and judgment. Because barbiturates are highly effective in oral doses and their cost is not generally excessive, intravenous use (and its accompanying problems) is rare (Le Dain, 1973). Barbiturates have been implicated in a large number of deaths, in fact, more than attributed to all other

psychotrophic drugs combined (Le Dain, 1973). Even so, Le Dain (1973) reports that relatively few deaths would be considered accidental. Most have been judged as suicidal or intentional attempts to inflict self-injury. Inadvertant fatalities in users seeking the psychoactive experience comprise a very small proportion of the barbiturate related deaths. Barbiturates may lead to physical addiction similar to that induced by alcohol. Abrupt withdrawal from the drug may be intense and life threatening. Although useful estimates are lacking, only a small proportion of non-medical barbiturate users are expected to suffer adverse medical effects. The effects of tranquilizers and other sedative hypnotics may be considered in the same light since their effect is similar but less intense.

A distinction must be made between moderate and high dose amphetamine use (Leavitt, 1974). Use is accompanied by few or no adverse medical effects. Some of the following effects may be experienced: insomnia, blurred vision, tremor, nausea, headache, dizziness, heart palpitation, chest pains, chilliness, urinary retention, diarrhia, or constipation (Le Dain, 1973). "There does not appear to be any evidence of irreversible physiological damage associated with long-term use of moderate doses of amphetamines" (p. 340). High

dose toxic effects are similar to those described above except in greater intensity. Severe chest pain, abdominal pain, and unconsciousness may be experienced. The chronic speed user is characterized by dehydration, weight loss, sores and chronic ulcers, brittle fingernails, teeth damage (from grinding), chronic respiratory infection, liver and cardiovascular diseases, hypertension, and gastrointestinal dysfunction (Le Dain, 1973). Necrotizing angitis (an inflammatory disorder of small arteries) may be seen in some users. Complications from situational use (septic administration) are similar to those described for intravenous heroin use. "Speed kills" has been a popular slogan among both users and prohibitionists. Although mortality rate among high dose users of amphetamines (especially methamphetamine) is higher than normal, evidence for overdose deaths are lacking (Brecher, 1972). Deaths are generally violent and associated with the life-style and paranoia (see psychological/neurological effects) of the high dose user. Since the adverse medical effects are associated primarily with high dose users (especially intravenous), the same estimates may be used as prescribed in the psychological/neurological aspects discussion. At its peak in Canada (summer, 1970), Le Dain (1973) estimated two to three thousand high dose users with

another 3,500 to 4,500 irregular high dose users. Thereafter such use fell dramatically. Proportion of users at significant risk of harm would be small.

Reference should be made to another prominent stimulant. Caffeine is the most common non-medically used drug. It is generally considered innocuous, and in amounts customarily used, this may be a fair representation. However, a condition known as caffeinism is characterized by such symptoms as low-grade fever, flushing, chilliness, insomnia, irritability, headache, irritation of the stomach, and loss of appetite. The similarity between these conditions and those observed with moderate amphetamine use is to be noted. In varying degrees caffeinism is common to those persons whose employment permits access to bottomless cups of tea or coffee, such as, intellectual workers, actors, waitresses, night employees, and truck drivers (long distance) (Brecher, 1972). Estimating incidence of caffeinism is not possible.

Commonly used hallucinogens (notably LSD) are responsible for relatively few adverse medical complications (except as included in the psychological/neurological section). Certain types of adverse reactions may occur such as, chills, goose flesh, facial flushing, urination changes, headaches, tremors, and nausea (Le Dain, 1973). These do not appear

to be very prevalent nor intense. Certain types of accidents have been reported in association with the altered perception and judgment with LSD. Stories of LSD users jumping from windows or committing suicide have been frequent. As Brecher (1972) noted, the publicity given to these events was disproportionate to their occurrence. Overdose deaths are virtually unknown for the common hallucinogens (Le Dain, 1973). Beginning about 1967, sensational publicity and controversy arose with reports that LSD caused chromosone breakage and led to birth defects. This controversy persisted in the scientific literature through 1971 and to the present in the minds of the public. After a thorough reappraisal of the scientific literature, the present consensus is that such effects and defects have not been scientifically established (Brecher, 1972; Le Dain, 1973; Wells, 1973).

The inhalation of solvents and gases for their psychoactive effects has been reported to cause brain damage (discussed in psychological/neurological section) and death.[13] Whereas a number of deaths have been reported, the majority

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[13] The breadth of this category warrants caution in making generalizations. Discussion has been limited to the more commonly used solvents and gases, namely, model airplane glue and gasoline.

have been attributed to suffocation rather than any direct pharmacological action of the substance as popularly believed (Brecher, 1972). Sniffers have commonly used plastic or paper bags in order to concentrate and deliver the vapors. A loss of consciousness has prevented some users from removing their heads from the bags in order to breathe. Some temporary medical conditions are known to be associated with solvent use. These include; gastroenteritis, hepatitis, jaundice, blood abnormality, and peptic ulcers (Le Dain, 1973). Once again adverse effects have been noted almost exclusively in a small proportion of users--those involved in extensive use.

Association between tobacco use and medical complications is well documented. Although nicotine is one of the most toxic drugs known, few deaths are attributed to its non-medical use. Conventional means of administration usually preclude fatal levels of the substance to be taken in. Tobacco is a relatively common cause of poisoning in children when the substance is ingested, but since gastric absorption is slow and the substance often triggers vomiting, deaths in children from such poisoning are rare (Le Dain, 1973). Acute effects of tobacco generally include nausea, vomiting and dizziness (Leavitt, 1974). Chronic effects

of tobacco use are attributable not only to the nicotine but also to the tars and other irritants which are present in the smoke. A large number of carcinogenic substances have been identified in tobacco smoke (Brecher, 1972). A series of reports sponsored by the Surgeon General of the United States have provided insight into tobacco related conditions (cited by Le Dain, 1973). Tobacco use is significantly related to conditions which not only cause severe discomfort but are also responsible for early death. These conditions include: cancer of the mouth, larynx, lung, esophagus, kidney, and bladder; ulceration of the stomach and duodenum; bronchitis and emphasema; cirrhosis of the liver; circulatory diseases such as coronary artery disease, hypertensive heart, and general arteriosclerosis. Death rates range from 1.5 to 10.8 times normal for these smoking related conditions. Average life expectancies are reduced an average of eight years and four years respectively for young men who smoke over two packs per day or under one half pack per day. A positive relationship has also been observed between smoking during pregnancy and the incidence of premature birth, spontaneous abortion, still birth, and neonatal death (Government of Canada, 1969). An estimate of incidence under the undesirable consequence = problem concept

is difficult to obtain. Available statistics have focussed on diagnosable conditions and death. However, patterns of smoking differ significantly from the general log normal distribution found with other non-medical drug use. According to a recent Health and Welfare Canada (1976) report, only about three percent of Canadians over 15 years could be considered occasional smokers (meaning not daily). Regular smokers comprise a full 40% of Canadians. Precurser conditions to those reported above (which may not become full blown) would affect a large number of regular users. These are not generally considered in the literature even though they might reasonably be classed undesirable consequences under the present problem conception. A further point needs to be made. There is no doubt that tobacco use is highly dependence producing (Brecher, 1972; Le Dain, 1973). So is heroin and other opiate type drugs. In and of itself this quality has not been considered an undesirable consequence under the present problem conception. But major differences are to be noted between the heroin and tobacco type dependence. Medical problems associated with tobacco use are directly related to the main active ingredient (nicotine) and manner of use (smoking). None of these are due primarily to effects of social/legal sanctions. With

heroin and like drugs the social/legal sanctions have been identified as the source of almost all of the medical consequences. Holding social/legal effects constant, addicting properties of heroin are of little significance, but those of tobacco remain closely associated with the medical complications. This point is reexamined in the discussion of cannabis.

Cannabis has been the subject of continuing debate regarding its supposed harmful effects in users. Previous reference has been made to the Le Dain (1973) observation that the volumous cannabis literature is of questionable validity. Even in the credible scientific literature, harmful effects have been so illusive as to make the observer question their reality and prevalence. A number of medical conditions have been associated with cannabis use. Among these are permanent brain damage, impaired immune response, lung injury, hormonal disturbances, chromosome damage, disturbances of basic cellular metabolic processes, and vestibular damage (Kalant, 1975). However, many investigators have not found convincing evidence of physical (or mental) damage. The apparent contradictions and differing opinions may not be as puzzling as it appears. The question is not whether or not these conditions <u>can</u> occur but under

what conditions do they occur. For example, Kalant (1975) has noted accumulating evidence suggesting that the frequency of chromosome abnormalities is higher with heavy cannabis use. Even so, he notes, "this is not specific or unique to cannabis. It can occur with a variety of other drugs and the common element is heavy use, not the specific drug" (p. 26). Other drugs that may also cause the same defect are caffeine, aspirin (Le Dain, 1973), and antihistamines (Einstein, 1975). Such chromosome damage is not limited to drugs. Nuclear radioactivity, x-rays, pollutants, fever, and viral infection also result in chromosome damage (Le Dain, 1973). But even if chromosome damage does occur in heavy cannabis users, this may not result in birth defects. Discussion may be found in Brecher (1972), Le Dain (1973), and Leavitt (1974) on this point. At the present time, there is no more evidence that cannabis breaks chromosomes and causes birth defects than there is for aspirin, caffeine, fever, or viral infection causing the same effects. Other findings may be evaluated in a similar frame. Kalant (1975) has noted that some scientists have concluded tetrahydrocannabinol (THC, the main active ingredient in cannabis) inhibits nucleic acid or protein synthesis in brain or testicular tissue. However, in order to obtain this adverse

effect, researchers used dosages approximating 1,000 times that which would be expected in the moderately heavy users. Kalant's (1975) own research has demonstrated permanent learning deficits in rats as a result of prior cannabis intoxication of three to four hours per day over a six month period. As he noted, the effect was dependent on the extensive exposure and could not be duplicated with even one half that amount. Concern has also appeared in the literature for the possible adverse effects of cannabis smoke (since smoking is the most common means of use). This concern has originated out of knowledge of ill effects from tobacco smoke. Although evidence is lacking regarding this possibility, there is reason to believe this would not become as extensive as found with tobacco use. Marijuana use is not considered physically or psychologically addicting in the majority of users. Unlike tobacco use, the usual log normal relationship between incidence and degree of use would be expected to hold. Only a small proportion of users at the heavy use end of the continuum would be expected to be at significant risk. With the available evidence, there is no reason to expect that the majority of cannabis users are at risk of experiencing significant medical harm from that substance.

Balancing Harm With Benefit

There is no reason that all consequences of non-medical drug use must be considered undesirable. As Kalant and Kalant (1971) noted, "The majority of users--whether of alcohol, marijuana, opium, barbiturates, or whatever--do not suffer . . . harmful effects, and derive pleasure or benefit from these drugs" (p. 127). There is no doubt that drug effects are pleasurable, but to consider such use beneficial gives rise to much controversy. Users typically allude to a wide variety of beneficial effects, but many observers attempt to discredit such claims by denying their safety, existence, or legitimacy. (Previous discussion has raised doubt about the validity of the safety argument.) Arguments against legitimacy or existence of beneficial effects have become intertwined with concepts of causation. Persons against any use of the non-sanctioned drugs may take the position that drug use is pleasurable but is either a morally unredeeming quest for hedonic experience, or is motivated by undesirable psychosocial states. In either case, if the desired effects of non-sanctioned drug use can be limited to pleasure (by denying the existence of other types of benefit), the prohibitionist's task becomes easier and superficially convincing. Kalant and Kalant

(1971) have observed people who are strongly against any use of the non-sanctioned substances regard all such use as escapism.[14] For example, Strandmark (1974) states that his drug education orientation is premised on the view that drug misuse (undefined) is a coping mechanism or escape. If so, the sought after effects of non-sanctioned drug use cannot be considered beneficial. Henderson (1974) uses an explanation of immaturity to the same effect. The Bureau of Narcotics and Dangerous Drugs (1970) has attributed non-sanctioned drug use to "acting out" behavior and attempts further discreditation by representing the effects as "unreal". Houser (1969) has also referred to "unreal sensations" (p. 15) in an effort to convince the reader that such effects are not legitimate. As observed by Goode (1972), a typical medical position not only attempts to attribute medical damage to non-sanctioned drug use but also attempts to argue that the perceived benefits are counterfeit. This argument attempts to discredit the drug experience as a

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14 The added assumption here is that escapism is necessarily undesirable. This is subject to debate which is acknowledged but not examined in this dissertation. For further discussion on escape as a positive or negative motivation see Steffenhagen (1974).

denial of reality itself or a violation of some undefined natural order. It should be noted that sanctioned drugs such as alcohol have been exempt from these accusations.

To deny or discredit the claims of beneficial effect by name-calling strategy does little to promote understanding or solution. Whether or not such perceived benefit is real or legitimate by some observer's value judgment is irrelevant. The fact that numerous persons perceive benefit must be taken seriously and an attempt must be made to dispassionately examine the possibility.

Other difficulties arise in attempting to explore the concept of drug oriented benefit. In the words of Kalant and Kalant (1971), "most investigations . . . have been looking for harmful effects, and virtually no systematic study has been made of possible beneficial ones" (p. 87). Although some studies on creativity may be found since the Kalant and Kalant (1971) statement, it generally holds today. This does not deny the existence of a literature pertaining to beneficial potential of non-medical drug use. A literature does exist but is largely philosophical and anecdotal. Because it is often considered antagonistic and contradictory to conventional view, it has remained on the periphery of "respectable" science. Interestingly, opposition to the

advocacy literature has been incorporated into the respectable literature, even though such opposition is also unsupported in the conventional sense. Another difficulty arises out of the nature of the beneficial claims from drug experience. These claims are highly subjective and personal. Science, including psychological science, has a history of intolerance for subjective phenomena. Difficulties of obtaining valid measures of subjective phenomena are well known. Sachs (1973) has observed, "many psychologists adapted (sic) the position that if they could not measure a proposed entity, the existence of that entity was not worthy of consideration" (p. 2). Even when science has attempted to study drug related subjective phenomena through conventional methodology, validity must be questioned. For example, marijuana users often report hearing music more acutely under the influence of the drug, and also that it makes the experience richer, more exciting, and enjoyable. A "scientific" study attempted to examine these claims by observing the effects of marijuana intoxication on auditory (and visual) threshold. No difference was found between normal and intoxication thresholds. But what relation does threshold have to altered perception? Is it not as feasible that the claimed increases in auditory acuity could be due

to altered attention? Why would we expect a linear change over the normal sense range, which would be reflected in threshold? Threshold is a lower limit of conscious recognition of sensory information. Even assuming subconscious perception is not a factor, it is difficult to accept threshold as a valid index of the perceptual phenomena claimed by users. An analogy may be drawn from a non-drug related situation. An optimetrical acuity test is a form of threshold test. Would we expect the visual perceptual ability of the artist to result in a lowering of his/her visual threshold over that of a person with less visual perceptual skills? Goode (1972) has attempted to argue that in order to understand the subjective claims of users the strict laboratory approach would have to be abandoned.

> Because many subjective feelings have no 'scientific' or empirical validity, traditional positivistic pharmacology and behaviorist psychology have avoided levels of experience conveyed by the subject through language, through explanation of what he feels. (p. 29)

Having discussed many of the problems in attempting to deal with the possibility of beneficent effects from non-sanctioned drug use, a cautious examination of claims, counterclaims, and evidence may be made. It should be noted that most of the attention in the literature has been

directed to the drugs which cause hallucination and other perceptual distortions--namely marijuana and the hallucinogens. Opiates, depressants (including tranquilizers, sedative-hypnotics, etc.), and stimulants have generally not been attributed beneficial effects beyond pleasure. Cannabis and the hallucinogens have been credited with a variety of beneficial effects described as mind expansion (with whatever meaning), creativity, aesthetic experience, or religious experience. The vagueness and indeterminacy of these claims have resulted in a focus on creativity since it may be seen to subsume at least part of the other claims and has been subject to some quantification and study.

Creativity and Related Effects

Statements made by prominent spokespersons on both sides of the question provides some insights. On the pro side, Leary (1968) claimed: "Psychedelic drugs . . . enhance the creative perspective, but the ability to convert your new perspective, however glorious it may be, into a communication form still requires the technical skill of a musician or a painter or a composer" (p. 143). Watts (Playboy, 1970) also claims creative benefit from the psychedelic experience. "Having seen some of the more recent works . . . I think LSD has been very beneficial (to the creative experience) . . .

I can only say from my own point of view that I have derived all kinds of ideas for lectures and writings from it" (p. 55). On the other side, Louria (1968) has pronounced LSD produced creativity a myth. Cohen (1968) has found, "An overestimate of one's capabilities is not infrequent. Often mental productions are not as highly assessed when they are later examined in the sober state" (p. 34). Yolles (1968) has also dissented by stating "It may . . . lead to heightened suggestibility and a faulty perception, really an exaggerated notion of thinking more clearly, profoundly, and creatively" (p. 11). Examining these representative statements, it appears doubtful that the writers are referring to the same aspect of drug experience. Leary and Watts have referred to creative benefit outside the drug experience. The dissenters have referred to creative abilities under the influence of the drugs. Taking this into consideration, one might be tempted to accept all statements since they are not contradictory as first examination may seem. But to deny the possibility of creative product under the influence of drugs is countered by creative works which the authors claimed to have undertaken in a drugged state. Huxley reportedly wrote parts of three books, Heaven and Hell, The Doors of Perception, and Island while under the influence

of mescaline (Leavitt, 1974). Kesey supposedly took peyote and LSD prior to writing several passages of One Flew Over the Cuckoo's Nest (Leavitt, 1974). There must be other questions asked about these claims, but it would appear that the drug state is not incompatible with creative production. However, this is still empirically short of demonstrating causation.

There are a priori reasons why drug effects may be expected to enhance creativity. Almost any out of the ordinary experience may provide inspiration, or a different perspective which could lead to a creative work. The key here is that it could, not necessarily would. But Leary (1968) never claimed that psychedelic experience would lead to creative work. His statement carefully qualified under what conditions such benefit might be experienced. There is no reason to believe such an effect would be reliable. One does not find reliable stimuli for creativity outside the drug experience. But this does not deny the possibility as the dissidents have attempted. Leavitt (1974) has suggested relaxant drugs such as alcohol could stimulate creativity by relieving anxiety or other similar states which may be counterproductive to creative expression. One might extend this type of reasoning to cannabis and other drugs.

Certainly cannabis has been revered by users as a means for stimulating creative expression (Le Dain, 1972).

As for empirical data, some is available and has been adequately reviewed by Leavitt (1974) and Le Dain (1972, 1973). Presentation here would serve little purpose, taking into consideration previous discussion of problems in this area. In his review, Leavitt (1974) concluded that two effects have been reliably demonstrated. First, users of hallucinogens generally <u>believe</u> that the drugs improve their creative talents; and second, it is undisputable that during the drug states they do become more interested in aesthetic pursuits. Beyond that, the data are sufficiently ambiguous to make further conclusions impossible. Le Dain (1972, 1973) has similarly declined to draw any significant conclusions from these studies. These reviews have not been complimentary to scientific acceptability of the creativity literature.

CHAPTER IV

ANALYSING THE DRUG EDUCATION LITERATURE

Part I--Identifying Expectations and Intentions of Drug Education

Introduction

To understand and analyse the rationales upon which drug education programs are based requires an understanding of what is to be prevented. Since problem definition and goals of drug education have not been clearly specified, difficulty is experienced in this task.

Drug education commentary has often included vague and idiosyncratic statements of expectations. Numerous contradictions occur which are obscured by the lack of specificity. This section identifies the range of expectations for drug education and presents a detailed overview of the ways in which these expectations have been presented. As detailed below, apparent meaning of the statements of intent have not always been congruent with the procedures adopted.

Three main divisions have been used. The first identifies those expectations which express commitment to an abstinence goal. Another presents programs or commentary in which a commitment cannot be discerned. The third division discusses recommendations favoring the alleviation of

undesirable consequences rather than drug use per se. The last division examines commentaries expressing commitment to both the abstinence and undesirable consequences goals.

Intentions to Create Abstinence

The intention that drug education should prevent all non-sanctioned drug use is most prevalent in the literature. Proponents of this view focus on use per se and attempt to identify procedures that will promote abstinence. For example, a New York State legislative committee has criticized any attempt to prevent undesirable consequences from non-medical drug use unless accomplished through an abstinence objective. Halleck (1970) found drug education to be a search for the "best method of persuading youth to abstain" (p. 1). Dearden and Jekel (1971) noted that although what is meant by the drug problem is not always clear, there is little doubt "parents and faculty want the students to stop using certain forms of drugs, or else not to start using them in the first place" (p. 118). In a review of current programs, Braucht, Follingstad, Brakarsh, and Berry (1973) referred to an "ultimate criteria of socially conforming drug using behavior" (p. 5). Wald and Abrams (1972) found "The traditional goal of most parents, educators, community leaders, congressmen and government officials has been to

discourage young people from experimenting with illegal drugs at all" (p. 124). "Although the approach may have changed, the aim of most public and private antidrug literature remains the same - to discourage young people from trying" (p. 125) non-sanctioned drugs. Kline (1972) examined a program with an emphasis on preventing drug experimentation. A program reported by Blavat and Flocco (1971) sought to prevent non-users from experimenting and to encourage users to stop. Dearden and Jekel (1971) attempted to "diminish the use of drugs" (p. 118) by changing behavior in their program.

An intention to modify attitudes towards drugs in a program described by Amendolara (1973) was evaluated by its ability to create anti-drug use attitudes. Tennant, Weaver, and Lewis (1973) sought to prevent drug abuse (undefined). In subsequent discussion reference was made to preventing illegal drug use. No reference was made to legal non-sanctioned drug use. Warner et al. (1973) reported a study "specifically designed to change ninth graders' attitudes toward drugs in a positive direction" (p. 50). The authors also referred to creating "healthy" attitudes. The program was evaluated in terms of creating anti-drug use attitudes--indicating an abstinence orientation. Swisher and Abrams

(1974) observed that stated objectives often include arbitrary terms like 'healthy', 'appropriate', 'proper', 'rational', or 'good' which are not adequately defined and represent value judgments which contribute to confusion. The authors also note that these terms "traditionally refers to anti-drug attitudes, that is, an abstinence goal is implied" (p. 14). This may also be seen in Swisher et al. (1973) where an attempt was made to transmit "reasonable and cautious attitudes to college students regarding drug abuse; and discovering the most effective means for reducing the incidence of drug abuse among college students" (p. 232). Although "abuse" remained undefined, the authors' abstinence intent was reflected in the measures used. Changing drug use attitudes by "induced cognitive dissonance" was an attempt to create anti-drug use attitudes (Swisher & Horan, 1972). Stuart (1974) referred to "inhibiting" use as a primary concern. Lewis, Gossett, and Phillips (1972) used trained student leaders to attempt to "change the percentage" of students using drugs.

Curricula and textbooks may be found for which formal evaluation studies, such as reported above, are not available. In most cases the intent is clearly to promote abstinence of the non-sanctioned drugs. Shevlin (1971) has

presented a textbook for school use which explains to the student "When you read this book, you will understand . . . that it is dangerous for you to experiment with any drugs" (introduction, no page number). An alternatives approach by Cohen (1973) intends to eliminate the demand for drugs. A computerized program described by Cassel (1973) has a stated outcome expectation of "prevention of dangerous drug abuse". Although the meaning of abuse was not explained, contextual use included any use of non-sanctioned drugs. "Few adolescents will turn to drugs" (p. xiii) if students are educated as prescribed by a Stamford Board of Education (1971) curriculum guide. A series of eight curricula were adopted for reprint and distribution by the National Clearinghouse for Drug Abuse Information (1969). Each intends to discourage all non-sanctioned drug use.

Indeterminate Statements of Intent

A number of programs and commentary do not clarify their intent by statements or context. Strandmark's (1974) confluent education approach refers to alleviating "drug misuse" (undefined, p. 102), "heavy use of drugs" (p. 103), and "artificial, chemically induced means" (p. 104) of meeting interpersonal needs. Girdano and Girdano (1972) want the students of their programs to reach "intelligent

behavioral decisions" (p. 4). No description has been offerred as to what is considered an intelligent decision. The Coronado Plan for preventive drug abuse education (Coronado Unified School District, 1973) has not defined the nature of the "abuse" the program is to prevent. Swisher and Piniuk (1975) refer to "development of a drug-resistant individual" (p. 67) without specifying meaning (although other work by the senior author has focussed on abstinence). The authors also refer to equipping the student with certain attributes "so that when they later face a drug decision, it will not become a major factor in their lives" (p. 69). Meaning of this statement was not provided. Corder (1975b) also refers to "drug-abuse-resistent attitude and behavior" (p. 113) being the goal of drug education. Although the importance of defining abuse was noted by the same author in an accompanying article (Corder, 1975a), he failed to do so in either article. Corder (1975b) also refers to "establishing healthy attitudes towards drugs" (p. 118) without explanation of meaning. Baker (1973) credits an Ohio drug education program with creating "a more positive attitude" (p. 40) without explaining if this meant anti-drug use or caution toward harmful drug use. Low (1976) recommends developing personal responsibility, experience management skills, and

other attributes to combat intoxicant problems. Whether these attributes were intended to prevent drug use or undesirable consequences was not specified. "Rational" approaches to drug education have been proposed by both Bedworth (1972) and Segal (1972). Bedworth (1972) has recommended preventing drug abuse by teaching the individual to make "rational" choices. The meaning of abuse was not specified. Although the author stated the goal should not be to eliminate all drug use, it remained unclear as to what the choice making ability was supposed to prevent. Segal's (1972) prescription disagreed with anti-drug programs seeking to eliminate all drug use. His recommendation was to place the individual in a position to make informed decisions. Discussion detailed how to do this by placing drugs in a "proper" perspective but it was not explained what the informed decision making ability was expected to prevent.

Intentions to Prevent Undesirable Consequences

Another school of thought on the intent of drug education focusses on preventing undesirable consequences rather than use per se. This is found primarily in the prescriptive rather than the descriptive literature. A report by the World Health Organization (1974) emphasized its concern for preventing incidences and severity of drug-related

problems and not with prevention of drug use per se (p. 18, 27, 32). The contrast of this position with the incidence = problem position is obvious.

> In a country where there is widespread use of a given drug and where the majority of users are not directly and personally harmed by such use, the challenge may thus be to prevent dependence rather than to prevent or prohibit drug use per se, especially as the latter objective is often unrealistic. (World Health Organization, 1974, p. 27)

Similarly, the Southern Regional Education Board's (1972) drug education guide suggested the drug problem be more appropriately labelled problem drug use. A Randall and Wong (1976) review labelled the objective of total prevention of drug use "a little ludicrous" (p. 17). They suggested that even if a drug free society is to remain an ultimate goal, a realistic first step appears to be the creation of a drug safe society. Goode's (1972) analysis concluded, "The only realistic approach . . . is to develop methods, not to eliminate drug use or even to drastically reduce it, but to live with it and to make sure that drug users do not seriously harm themselves and others" (p. 212). Robinson (1975) recommended helping young people become rational decision makers. Unlike others discussed above making similar recommendations, the author clearly stated that this

would be expected to foster more cautious and less harmful use in those who would decide to use drugs. Wald and Abrams (1972) made the same suggestion, and noted this objective may be controversial since it neither demands nor expects decisions will exclude non-sanctioned drug use. An anomaly occurs in a Swisher (1974) article where that author states he is committed to the undesirable consequences orientation. His concept of abuse prevention "is that abuse leads to negative consequences for the individual" and drug education should "result in fewer negative consequences for the individual" (p. 143). Despite this commitment, the remainder of that article concentrated on outcomes of creating anti-drug use attitudes or abstinent behaviors. Other articles by the same author (For example, Swisher & Crawford, 1971; Swisher et al., 1971; Swisher & Horan, 1972; Swisher & Horman, 1970; Swisher & Piniuk, 1973) also concentrated on abstinent behavior and attitudes. No attempt has been found to determine if drug education prevented "negative consequences".

Intentions to Prevent Undesirable Consequences and Use

Both Le Dain (1973) and the Southern Regional Education Board (1972) have made statements incorporating both problem orientations. Le Dain (1973) recommended:

> Our objective of social policy should be to discourage the non-medical use of drugs as much as possible and to seek a general reduction in such use, but at the same time, to equip those who persist in use with sufficient knowledge to enable them to use drugs as wisely as possible. (p. 19)

Wise choice was defined as "a choice that will avoid harm" (p. 21). The Southern Regional Education Board (1972) document has taken a similar stance presenting the intent of drug education for reducing the amount of drug misuse,[15] for helping students make responsible decisions who will decide to use drugs experientially or recreationally, and reducing the amount of dysfunctional drug use. Although the meaning of "responsible" was not stated, concern for both incidence and consequences was clear.[16]

Conclusion

The intention to promote abstinence by drug education has been stated in a number of idiosyncratic ways. Although

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15 Drug misuse was defined as use of a drug outside its therapeutic intent.

16 This position was based on a consideration of magnitude which estimated--most students do not try drugs (excluding alcohol and caffeine), most of those who do discontinue after brief exposure and few suffer ill effects from non-sanctioned drug use (estimated two percent) (Southern Regional Education Board, 1972).

accurately determining this meaning is sometimes difficult, it is predominantly associated with research studies and existing programs. A number of programs and prescriptions do not provide sufficient detail to determine their intent. The prevention of undesirable consequences is associated primarily with the prescription literature. As argued in a later section, the need for justifying prevention programming has likely made it necessary to adopt the abstinence objective for its applicability to the larger proportion of the target group.

Part II--Major Thrusts in Drug Education

Introduction

A number of commonalities may be identified which apply across differing drug education approaches. The first presented is information--which has been the subject of continuing controversy and debate. The information debate has been analysed and an attempt made to place it in a perspective consistent with conventional educational thought. The promotion of decision making skills has often appeared with the expectation that students, so skilled, would avoid drug abuse. This assumption has been analysed and questioned. Many programs consider improving poor self-concept or correcting other defective psychological states essential to

preventing drug abuse. These assumptions have been examined for validity and empirical support.

Information in Drug Education

Orientation. The place of information in drug education has been the subject of much controversy. In the latter half of the 1960s, drug education was predominantly based on information-giving. Proponents of these programs reasoned that students in possession of the facts would realize the inherent dangers in non-sanctioned drug use and would avoid use. Various kinds of information-giving programs have been identified. Swisher et al. (1971) have listed six different types based on an earlier analysis by Richards (1969). These six types were: scare tactics, two-sided presentations, use of authorities, students as teachers, curricular integration, and humor.

A major difficulty in presenting information to students for the purpose of promoting abstinence has been detailed in Chapter III. That is, probabilities of harm resulting from most non-medical drug use was not as great as authorities assumed. Frequently, the situation promoted an unrepresentative focus on infrequently occurring effects of non-medical drug use, embellished by "facts" drawn primarily from the imagination. Halleck (1970) referred to

the presentation of "esoteric side effects of a wide variety of little known as well as popular drugs" (p. 2) in the name of drug education. The literature has frequently identified the inherent hypocrisy of attempting to prevent non-medical drug use through misrepresentation and the ambiguity of attempting to convey an anti-drug use message by making accurate presentations of the facts.

Many of the earlier attempts to prevent non-sanctioned drug use have been described as scare oriented (Bedworth, 1972; Fulton, 1972; Hammond, 1973). The scare tactic has been singled out of the other information approaches for special condemnation. Empirical evidence discrediting the scare tactic is almost non-existant. Noting this a review by Braucht, Follingstad, Brakarsh, and Berry (1973) carefully stated that certain writers "support the common assumption that scare tactics are probably ineffective and should be avoided" (p. 3). Although this assumption is often repeated, empirical evidence is lacking. This does not make the scare or other information approaches less disagreeable on other grounds, namely, educational and/or ethical grounds. These have been detailed in Chapter V.

Empirical Evidence for Information Approaches. Unfavorable commentary on information approaches has been made on

the basis of educational integrity and informational accuracy. This has been accompanied by the supposition that drug education has "not worked" (Baker, 1973; Bard, 1975; Bland, 1971; Cornacchia et al, 1973; Halleck, 1970; Henderson, 1974; Nail & Gunderson, 1975; Randall & Wong, 1976; Robinson, 1975). "Not worked" refers to the belief that it has failed to prevent young people from using non-sanctioned drugs. Despite this opinion, there is surprisingly little empirical evidence on this matter. Berberian and Thompson (1975) noted "Conventional wisdom has it that drug education has failed" (p. 1) but that "a review of the literature . . . does not necessarily support this view" (p. 1). Their review of nineteen studies purporting to evaluate drug education found that only seven actually studied the possible effects of drug education on the non-medical use of drugs. Of these seven, three reported inconclusive results, two reported some degree of success, and two some degree of failure. All were judged to have serious design deficiencies. Another review (Braucht, Follingstad, Brakarsh, & Berry, 1973) reported, "there is almost no empirical evidence of the effectiveness of these programs" (p. 27). Goodstadt's (1974) and Randall and Wong's (1976) reviews concluded with similar statements. Some of these studies have been reviewed

below.

Swisher et al. (1971) found a significant relationship between liberal attitudes and knowledge of drugs in their samples of high school, college, and university students. Similarly, an adolescent survey by Stuart and Schuman (cited in Stuart, 1974) found non-users to have lower information scores than users. This held for all drugs except alcohol. Both studies cautioned that their findings did not necessarily imply causation between knowledge and use, but did suggest information-giving may not be a deterrent to use. Swisher and Hoffman (1975) and Hoffman (1971) assessed knowledge, affective and behavioral factors before and after a fact oriented program. Greater knowledge was associated with more favorable attitudes toward use. Again the authors stated that causation was not indicated. It should be noted that Swisher et al. (1971), Hoffman (1971), and Swisher and Hoffman (1975) are all reporting the same data; therefore, these studies should not be accepted as independent replications. Although the reported effect is statistically significant, relationship between knowledge and attitude was nominal ranging between correlations of -.17 and .40. Conclusions derived from the data should be viewed with caution.

Stuart (1974) examined the effect of a fact oriented

program on knowledge, use of drugs, sale of drugs, and worry about drugs. Knowledge increased as did alcohol, marijuana, and LSD use while worry about drugs decreased. Although the author carefully qualified the possibility of increased use from educational efforts, the study has received national prominence (for example see Bard, 1975; Medical Tribune, 1973). Berberian and Thompson (1975) and Goodstadt (1974) have questioned the validity of this study on the basis of design.[17]

Kline (1972) reported an evaluation of a substance oriented multi-media drug education program for junior high school students. It was found "that 25 percent of professed users claimed to have stopped using and 50 percent of the admitted would-be users reported that they decided not to try drugs" (p. 238). However, lack of control, failure to distinguish between different drugs and methodology that

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17 The quoting and requoting of research without regard to validity of the study is a common problem in psychology and education. This is a persistent problem in the drug education field and although not resolved in real terms, a conscientious analysis of the literature demands taking the grosser violations into consideration. The writer has attempted to identify those issues of questionable support when substantiating opinion is available. A case in point has originated this footnote.

created high demand for acceptable answers have compromised reliability and validity. Berberian and Thompson (1975), Goodstadt (1974), and Randall and Wong (1976) judged this study to be lacking in useful information. Blavat and Flocco (1971) claim a "workable" drug education program utilizing 55,000 pieces of drug information literature and presentation by ex-addicts. A post-program survey found 59 percent of those admitting drug use felt the program influenced them to stop. For similar reasons presented for the Kline (1972) study, the Blavat and Flocco findings cannot be accepted without skepticism. Tennant, Weaver, and Lewis (1973) examined four programs based on information. Program A used a two hour panel discussion and a further two hour question-answer session. A second phase used laboratory demonstrations of the effects of select drugs on rats. Although direct measures of drug use were not made, drug related hospital admissions were examined for the drug education group and a control group from another area. The authors report no drug-related admissions for the experimental group and 13 admissions for the control group (a significant difference). The authors cautioned this might mean only that experimental subjects were more careful after the drug program rather than refraining from drug use. The

authors failed to point out that the control group was about two and a half times larger than the experimental group. This observation raises question about the validity of the hospital admissions criterion. Program B was directed to high school students over a one week period in seven one hour sessions. One month later, an anonymous questionnaire found that 20 percent believed the program altered attitudes in the "positive" direction and would discourage illegal drug use. Twenty-three percent felt the program had the opposite effect. Program C used a mobile drug education display van for junior high school students. The authors noted five students had tried drugs as a result of the display (one was admitted to hospital accompanied by four friends). Program D was presented to fifth and sixth grade students. Lessons took place over ten weeks with one hour per week sessions. Before and after comparisons indicated no change in intent to use alcohol, 10 percent intended to use tobacco after the program compared to 40 percent before, and 13 percent intended to use illegal drugs compared to 41 percent before the program. The authors concluded from the four studies that drug education may have neutral or negative effect in secondary school, but possibly a positive effect in elementary school. Lewis, Gosset, and Phillips

(1972) evaluated a two day "crash" drug education program in high school. The approach used was primarily information transmission. An anonymous questionnaire showed no significant difference between experimental and control groups for 32 drugs and a nine percent increase in alcohol use.

Information based drug education programs have not demonstrated ability to alter non-sanctioned drug use as intended. Little evaluation evidence is available and that which is, raises serious doubt about the adequacy of the methodology (Berberian & Thompson, 1975). Despite the inability to demonstrate intended effect, many writers (Baker, 1973; Bard, 1975; Bland, 1971; Blum, 1972; Halleck, 1970; Randall & Wong, 1976; Robinson, 1975; Swisher, 1974) remain skeptical of the effectiveness of conventional drug education suggesting either it may be ineffective in discouraging use, or fear of drugs may be reduced resulting in greater non-medical use.

Information and cognition. Much of the commentary on drug information programs has led to the assumption or implication that knowledge and cognition are equivalent. This inconsistency with conventional educational thought has served to accentuate the confusion and controversy surrounding the so-called information approaches. The World Health

Organization (1974) informed the reader, "Drug information is a form of communication which simply imparts factual knowledge or transmits cognitive learning" (p. 45). Similarly, the Southern Regional Education Board (1972) referred to the failure of the cognitive approach, meaning information based approaches. Two commentaries (Swisher et al., 1973; Warner & Warner, 1975) have referred to "cognitive (informational)" (p. 231 and p. 97 respectively) components of drug education. "Growth in the cognitive domain (information)" has been considered important by Matthews (1975, p. 61). Poley (1974) and Swisher and Piniuk (1975) have made reference to the evaluation of cognitive type approaches by measuring information gains. The point is that in conventional educational thought, cognitive functioning includes more than knowledge acquisition. The history of education is replete with criticisms of an earlier preoccupation with the transmission of fact. Resulting work by educators identified and distinguished between different levels of cognition. Whereas different conceptions have occurred, the most prominent first appeared in 1956 in the Taxonomy of Educational Objectives, Handbook I: Cognitive Domain (Bloom, 1956). Frequent reference to this work can be found in the education literature. In this conception, cognitive functioning is

divided into six levels. These are knowledge, comprehension, application, analysis, synthesis, and evaluation. Each of these levels are also subdivided. A notable feature of this taxonomy is its hierarchical nature with knowledge being the lowest level. Returning to drug education, Swisher (1974) made brief mention that drug education may have been unsuccessful because of emphasis on the lowest level of cognitive involvement.[18] This acknowledgement has failed to stimulate further consideration in the literature by Swisher or other workers.

A related commentary is found in the literature. In explaining why drug education has been a failure, Hammond (1973) suggested there has been a confusion between information and education. The World Health Organization (1974) and Le Dain (1973) stated that information is not the same as education. Although these discoveries are perceptive, it also appears that the drug education literature has been rediscovering education. The use of a cognitive taxonomy (especially Bloom, 1956) has been standard procedure in education for planning the education process and evaluating

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[18] It is also noted that the knowledge level includes more than the transmission of fact or information by the Bloom (1956) taxonomy.

its effect.

Despite these insights, the gap between drug education and conventional education thought has only been partially filled by current drug education prescriptions. With the recognition that information giving is not satisfactory as a drug education approach, recent recommendations have become preoccupied with affective and psychological process. The major exception to this has been numerous references to decision making skills. Except for the information level, the cognitive base of these newer approaches has not been acknowledged. For example, Swisher and Abrams (1974) proposed objectives in two levels for drug education. Level one objectives were considered basic to any drug education program. These are knowledge, attitudes, and behavior changes. However, level two objectives "focus on the individual and his needs; they can be categorized as 'affective' program goals" (p. 12). This includes increasing participation in alternative activities, clarifying values, improving decision making skills, and improving self-concept. In the conventional educational sense this arrangement is confused. Participation in alternative activities and improving decision making skills would not be considered affective goals. Decision making skills would be primarily a cognitive skill

focusing on the upper levels of the cognitive domain (Bloom, 1956). Participation in alternatives would likely be seen as a behavioral goal. Another anomaly arises with regard to the information objective. Swisher and Abram (1974) identified increasing knowledge as basic to any drug education program. "Regardless of how we interpret the existing research, simply disseminating factual information about drugs is a necessary, but insufficient goal of drug education programs" (p. 13). This commitment to information under the senior author's name is unexpected. Other articles by the same author (Swisher & Hoffman, 1975; Swisher, 1974; Swisher & Piniuk, 1975) referred to information as the "irrelevant variable". Swisher and Piniuk (1975) explicitly stated: "information is not considered essential in the development of a drug resistant individual" (p. 67). How information can be both "basic" and "necessary" as well as "irrelevant" and "not essential" has not been explained.

A further confusion in the meaning of cognitive learning may be noted in the literature. Braucht, Follingstad, Brakarsh, and Berry (1973) referred to "altering cognitive states such as knowledge and attitudes" (p. 5). Attitudes are not considered a cognitive state in conventional educational thought, but are part of an affective domain (Krathwohl,

1964).

Despite the controversy, contradiction, and perceived impotence of information in drug education, (and in the face of fears that it might be inflammatory), almost all current drug education programs have retained an information component. It may be subordinated to the dominant themes in programs presented by Cohen (1973), Coronado Unified School District (1973), Low (1976), and Southern Regional Education Board (1972), or integral to programs such as Cornacchia et al. (1973). It is important to recognize that the current situation is a search for an acceptable nature, blend, and balance of information within the prescribed programs rather than to continue the debate of whether or not information should be included at all.

Improving Decision Making Capacity

Frequent reference is noted in the drug education literature to the process of making choices. Alternate terms are found with similar meaning, including decision making, rational decision making, logical decision making, wise choice, informed choice, wise decision, intelligent behavioral decisions, and problem solving. These references allude to a process of encouraging and permitting a careful consideration of alternate courses of action in terms of costs and benefits.

Making use of an ability to make decisions by this weighing process is claimed to enable better decisions regarding non-medical drug use. However, Swisher and Abrams (1974) observed that few programs claiming to focus on decision making have explained their approaches. In most cases, the claim to promote decision making ability has not culminated in the teaching of decision making skills. Reference to these abilities have been descriptions of expectations of the student after the prescriptive program exerts its influence. Brown (1976) made a similar observation noting that no common methodology could be found between these programs claiming to foster decision making ability and "it is easy to get the impression almost any activity has been labelled as developing decision making skills more for its appeal than for commitment to the idea" (p. 18-19). Swisher and Abrams (1974) noted that programs frequently present discrepant facts in the name of decision making and ignore the processes involved. This concurs with a review by Mathews (1975) who found that programs claiming to promote decision making ability "frequently degenerates into 'convincing' them since we want to be sure that they reach the 'right' decision . . . and many don't" (p. 60). The claim to promote and encourage rational, logical, wise, informed, etc. decisions in drug education

may be more illusionary than real.

The concern for making rational decisions may be traced back to the discredited information approaches. The common supposition was that young people schooled in the facts would see how dangerous non-sanctioned drug use is and decide against use. The overriding assumption was that a rational person could only reach a decision of non-use. But research and colloquial observation judged the information approaches to have failed. Students showed no greater inclination to make the "correct" choice. In fact, fears arose that information may have encouraged the "wrong" choice to be made. This judgment was based on a preordained abstinence (incidence = problem) objective. The question that arises is, if only one acceptable alternative is allowed upon which the success or failure of drug education is adjudicated, can it be said that there is any choice at all? Despite claims made by the program proponents for permitting choice, the choice turns out to be non-existent. In the reappraisal that followed the discredited information approaches, the rationality of the student was questioned rather than the validity of the assumption that non-sanctioned drug use is inherently dangerous. Nor was the

rationality of the abstinence goal questioned.[19] This implied that students were deficient in decision making skills since they did not arrive at the "correct" decision.

Out of these concerns, an intensive search has been made to find alternate methods of insuring that students will make the preferred decisions regarding non-sanctioned drug use. However, the same type of situation is found in newer drug education prescriptions. For example, the Bureau of Narcotics and Dangerous Drugs (1970) informs the reader "It should be obvious to a rational person" that anyone willing to use illegal drugs "is certainly displaying very negative and childish behavior" (p. 39). This statement leaves no doubt as to what is expected as a logical decision by the Bureau. A texbook promoting a "choose for yourself" theme (Shevlin, 1971) informs the reader, "When you read this book, you will understand . . . that it is dangerous for you to experiment with any drugs" (Introduction, no page

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19 Promenent observers such as Fort (1969), Goode (1972, 1973) and Kalant and Kalant (1971) have questioned the assumption of inherent harm in non-sanctioned drug use and the abstinence goal. However, except perhaps on a verbal level, this had little influence on drug education.

number). Henderson (1974) also employs this type of reasoning.

> Immature people also tend to drift into a pattern of behavior without making a decision. If they do make a decision it is generally an emotional one, rather than a logical decision following adequate study wherein hazards are weighed out against benefits, after the alternates are evaluated. (p. 3)

Henderson's presentation is clearly against any use of non-sanctioned drugs and considers abstinence the only logical decision. A study upon which the Coronado Plan is based states: "The effective and hard-headed approach suggested by the theory used here, however, is to look for reasons for the undesirable behavior and to so change the situation that the next decision (choice) is the one desired by society" (Carney, 1970b, p. 7). The recommendation how to ensure the "right" choice was for "increasing perception of risk and decreasing perception of gain" (p. 6). No concern was stated for the representativeness of risk and gain but only for the manipulation of <u>perception</u> of risk and gain to ensure the desired decision. The director of the Coronado program (Bensley, 1971) described its aim to help students develop a personal value system. The values clarified student should "opt against drug misuse" (p. 9). Misuse was not specifically defined although reference was make to drug use only

under a doctor's supervision. Program guides (Coronado Unified School District, 1973) also refer to developing decision making and problem solving skills. "These also help students determine whether or not a high risk activity is likely to produce high gain or if it is likely to produce low gain or reward" (p. 11). Drug use and abuse (undefined) has been assumed to be a high risk, low gain activity (originating in the Carney studies 1970a, 1970b, 1971a, 1971b, 1971c). The only direct reference to the process of problem solving or decision making appears in the Secondary (Grades 9-12) Guide (Coronado Unified School District, 1973). This refers to creative thinking and lists without explanation stages of preparation, incubation, inspiration, and verification and revision (these stages may be found in most elementary psychology texts). It is also stated that there is "no room for mind-altering drug use ('Escapism", Cop-out', refusal to face reality by confusing self-induced unreality and seeing it as reality" (p. 78). It is noted that this statement refers to an adverse influence of drugs on the process of problem solving, rather than problem solving or decision making regarding the use of drugs. The program promoters wish to make no mistake that the student will arrive at the "right" decision. Although it is not completely

clear, the allusion to choice in the Coronado Plan may be another illusion of choice.

An abstinence intent is difficult to reconcile under a intent to promote rational, logical, wise, etc. decision making. As Blum (1972) noted, Americans create a heavy burden because they keep insisting people make up their own minds. There is sometimes a hidden assumption that these independent decisions must be the same as those who make such demands, and often forms of influence are used to bias the decision making process.

Another complicating factor arises. The abstinence objective may be incompatible with some people's idea of a rational decision. Blum (1972) noted that a student's decision to use drugs may be considered rational, since he/she may do so knowing the risk of harm is low. This comment was based on the following observation; most non-sanctioned drug use is considered enjoyable by users, and most undesirable consequences (especially of a lasting variety) are less prevalent than is popularly believed (Blum, 1972).[20] Under

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[20] There is a conflict here with the Coronado Plan which considers non-sanctioned drug use a high risk activity. The bulk of the evidence presented in Chapter III supports the Blum (1972) position.

these circumstances, abstinence cannot be the only defendable rational decision. With similar reasoning several authors suggested the decision making intent cannot preordain the student's decision. For instance, Robinson (1975) refers to "helping young people reach an intelligent, rationale (sic) decision about drugs" (p. 187). He specifies that this includes more careful use by those who will choose to use drugs. Kohn (1974) suggests informed choice should be the goal of drug education and efforts directed to enabling students to make their own wise decisions. Because of the disagreement about relative safety or danger among experts "the content of the pupils' wise decisions cannot be foreordained" (p. 78). Swisher and Abrams (1974) observed that programs attempting to foster decision making skills "should allow for students who have decided to use drugs, and are subsequently faced with choices about which drugs to use, when, how often and how much" (p. 16). These suggestions represent an undesirable consequences = problem conception. Wald and Abrams (1972) also recommended an enabling goal for youth to make informed decisions. They note that this goal is controversial since students would be encouraged to base their decisions on their own careful analysis regarding non-sanctioned drug use rather than to submit to laws

and other social demands without question. Because value judgments would vary even after similar analyses, decisions would be expected in favor of drug use as well as against drug use. However, the intellectually involved decision maker might be expected to keep drug use within bounds associated with low probabilities of harm. Le Dain (1973) appears to accept this view when referring to the need for "wise exercise of freedom of choice" which meant "choice that will avoid harm" (p. 21). A choice not to engage in non-sanctioned drug use will avoid drug related harm. But most does not result in harm anyway. Using Le Dain's (1973) position, most non-medical drug use is based on a wise decision. There are situations of non-medical drug use which are associated with high probability of harm (for example, high dose intravenous methadrine use). Prohibitionists have focussed on these situations in an attempt to promote abstinence. However, it is unlikely that a person would base their decision to use or not to use drugs on the potential harm associated primarily with careless or dependent use. Brown (1976) observed "When the 85 percent or so adults who use alcohol made that decision to use that substance, few would have based it on the undeniable harm associated with careless or alcoholic use" (p. 19). There is no reason to

expect a different reasoning process to be used with the non-sanctioned drug use.

Improving Self-Concept

Self-concept development has become a prominent feature of current drug education programs and commentary. Reference to self-concept is found in programs or prescriptions represented as values clarification (Bensley, 1971; Coronado Unified School District, 1973), confluent education (Strandmark, 1974), developing personal responsibility (Low, 1976), combating failure in schools (Betros, 1974), communications (Kurzman, 1974), or other (National Coordinating Council on Drug Education, 1974b; Nelson, 1975; Non-Medical Use of Drugs Directorate, 1975; Schaps, Cohen, & Resnik, 1975). Each of these applications make two important assumptions. First, it is assumed poor self-concept (lack of self-esteem or lack of self-acceptance)[21] causes non-sanctioned drug use or drug abuse. On the basis of this assumed cause-effect relationship, the preventive strategy is to correct the defective self-concept. Since the corrective prescriptions have been

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[21] Self-acceptance, self-concept, self-esteem have been used in the drug education literature as alternatives with the same meaning.

established for application to undifferentiated student groups, a further assumption is implied. That is, it is assumed that non-medical drug use (caused by poor self-concept) is sufficiently common to justify application of the corrective procedures to all students. Neither of these assumptions have received careful scrutiny.

A typical statement linking self-concept to drug use can be found in Le Dain (1973). "We see much non-medical use as having its origins in poor self image or lack of self acceptance" (p. 21). No empirical support has been offerred. Several qualities of this statement should be noted. "Much" implies quantity, "non-medical use" is undifferentiated as to kind (recall variable meaning of abuse discussion), and causation is implied. These elements are found in most references to self-concept development as a preventive strategy. For example, the National Coordinating Council on Drug Education (1974b) states that"drug educators have learned that people who abuse drugs often feel unhappy about themselves" (p. 1). The context of the statement supplies the assumed causation. Nelson (1975) claimed "Abusive behavior patterns, such as drug abuse, are generally developed by people who do not feel good about themselves" (p. 22). He recommends developing a positive self-concept as one of

the most important aspects of a preventive program. The elusive empirical basis for these claims has been further confused by "evidence" of questionable value. A New York State legislative committee (Betros, 1974) reported "the immediate cause of substance abuse is poor self-concept among the young" (p. 8). Support was offerred from the opinions of people interviewed. A prominent program (Coronado Unified School District, 1973) claims support from "research within our district and in numerous other schools throughout the nation" (p. 9). The five research papers referenced (Carney, 1970a, 1970b, 1971a, 1971b, 1971c) originate from the same internal source and require extensive editorial liberty to support that position.[22] Warner (1975), Goodstadt (1974), and Berberian and Thompson (1974) have

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[22] This statement is based on an examination of those volumous reports. All are based on the Risk Taking Attitude Values Inventory (Carney, 1972). As determined from these sources, the self-concept assumption has been implied from data from asking respondents to estimate the probability of "feeling good" or "feeling bad" as a result of various "risky" activities (such as drug use). Causation was "added" to the primarily correlative data. Since the term abuse was freely used and undefined, attempting to locate the "evidence" was even more tenuous. In any case, all data was based on respondents (students) opinions and did not include any attempt to empirically measure self-concept.

questioned the validity of these studies on the basis of methodological weakness. The studies themselves are apologetic for methodological weakness, although this did not prevent some far-reaching conclusions to be made. The evidence from "numerous other schools" was not documented.

Searching beyond the drug education literature fails to provide support for the self-concept assumption. Several studies have been reported using the California Personality Inventory (CPI). Hogan, Mankin, Conway, and Fox (1970) found no significant difference in self-acceptance between non-users and users of marijuana. This study included two groups of users (frequent and occasional) and two groups of non-users (non-users and principled non-users). Using high school and mental hospital samples Yeudall (1976) tested four groups (alcohol only, marijuana only, multiple users, and non-users). No differences were found in self-concept. Weckowitz and Janssen (1973) also failed to find a significant difference between a non-user group and a heavy marijuana user group. Because of a confounding variable, Weckowitz, Mason, Speng, and Radstaak (1973) attempted to replicate the earlier findings with a more stringently defined heavy use group. In that study the user group demonstrated <u>greater</u> self-acceptance. Brehm and Back (1968)

found some correlational evidence linking both self prescribed medical and non-medical drug use to low self-concept. Self-concept was measured by a test described by Osgood, Suci, and Tannenbaum (1957). In each case relationships reported were low (less than .28).

Support for the self-concept assumption in drug education cannot be derived either from the drug education literature or the literature relating to drug users selected from non-clinical populations. Since the meaning of abuse has been variable and unspecified, the examination of another line of evidence is indicated.

In support of the self-concept development approach to drug education, Swisher (1974) made a statement refering to existing empirical evidence.

> The epidemiological literature on <u>addiction and alcoholism</u> [emphasis added] invariably concludes that negative feelings toward self . . . . propel an individual towards a life style characterized by dependency on drugs or alcohol. If these factors are the basic underlying causes of the symptomatic compulsion to use drugs, then it is somewhat logical to conclude that a drug abuse prevention program concerned about the causative factors would attempt to alter these causes. (p. 157)

No references were provided with the statement, however an important difference is to be noted from the previous state-

ments. Negative feelings toward self is attributed to addicted and alcoholic persons. Aside from the causation portion (which is examined below) this may be verified in the literature originating primarily from persons who have come to the attention of treatment specialists (that is, clinical cases). Le Dain (1973) and Braucht, Brakarsh, Follingstad, and Berry (1973) reviewed the literature on personological characteristics of clinical addicts. Several years ago, Fort (1969) noted that most generalizations about drug users have been based on this source. The extent to which this information applies to addicted persons who have not entered treatment remains in doubt. In fact, Le Dain (1973) reviewed evidence suggesting the non-clinical addict does not differ from other people in personality characteristics.

The finding that addicted persons in treatment suffer from poor self-concept is not unexpected or revalatory. Murray and Jacobson (1971) noted that most patients in pschotherapy experience low self-esteem. However, this does not necessarily imply causation. The Swisher (1974) quotation above clearly refers to poor self-concept causing the drug dependent life style. Statements of rationale for the self-concept development orientations similarly refer to causation. The Le Dain (1973) statement presented above is

even more puzzling on two accounts, since it appears to contradict statements made later in the same report. First, Le Dain (1973) has referred to "factors frequently associated with the phenomena" (p. 779) and advised caution in using the term "cause." The same caution was repeated under discussion of separate drug categories and related psychosocial conditions (see pages 789, 799, and 807). The second point is that the data presented was almost exclusively derived from clinical cases. These qualifications were overlooked in the statement claiming much non-medical use was caused by poor self-concept. Similar contradictory reasoning is noted in the New York State legislative report (Betros, 1974). The committee accepted the opinion that "poor self esteem was the invariable common denominator of substance abuse" (p. 17) but not recreational experimentation (undefined). It was subsequently noted that raising self-esteem "is an absolute prerequisite to successful rehabilitation" (p. 17) of the person in treatment, and therefore, developing "true self-esteem" (p. 17) is a realistic method of helping people to "bypass substance abuse altogether" (p. 17). Further comment extended this reasoning farther by assuming "if self-esteem is critical to abstinence" (p. 18) drug use may be prevented by developing self-esteem. This reasoning cannot

be empirically supported.

In summary, the assumption that poor self-concept causes non-medical drug use cannot be supported. Although correlative evidence exists linking clinical addiction and poor self-concept, it is not possible to determine directionality of cause or if poor self-concept and addiction develop concurrently.

Correcting Defective Psychological States

A discussion of self-concept in drug education must merge into consideration of other psychological characteristics of drug users. Self-concept is only one of many psychological characteristics that have been studied in relation to drug users and it has been typically embedded in these other considerations. Some prescriptions for preventing drug abuse have proposed correcting defective personality characteristics. There have also been drug education recommendations for enhancing mental health as a preventative strategy (for example, Non-Medical Use of Drugs Directorate, 1975; Strandmark, 1974; Swisher & Piniuk, 1973). These orientations assume that some generalized personality disorder is responsible for non-medical drug use or drug abuse. For example, Strandmark (1974) claims:

> Most confluent drug education programs view the misuse of drugs [undefined] . . . as a coping mechanism or an escape. This form of drug use is viewed as a 'symptom' of deeper emotional or behavioral problems which stem from an individual's inability to meet his needs in ways that are not potentially destructive to him. (p. 102)[23]

As with the self-concept orientations, mental health approaches are premised on the assumption that poor or defective mental health (however conceived) is contributory to the non-medical drug use. Prevalence of the drug use caused by these conditions must be of sufficient occurrence to warrant application of the corrective procedures to undifferentiated groups of students. (As with the self-concept programs, the mental health development orientations have not attempted to identify students to which the hypothesis applies, but have presented the programs to students undifferentiated as to the mental health variable.) Since the approaches in question have not offerred supporting evidence for these premises, it is necessary to search the literature in an attempt to determine if an empirical basis exists.

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23 Strandmark's (1974) reference to the existence of other confluent drug education orientations ("Most") is not documented and cannot be verified by the available literature.

Much of this literature has been reviewed by Braucht, Brakarsh, Follingstad, and Berry (1973), and Le Dain (1972, 1973). With the exception of Le Dain (1972) these reviews have found the literature predominated by studies of the clinical addict. The Le Dain (1972) review focussed on cannabis. Each of these reviews have acknowledged that the evidence reported is primarily correlative and have (generally) avoided implying causation. A limited amount of evidence does point to causation under certain conditions and choice of drugs, and has been considered below. Conclusions of these reviews and other supplementary evidence follow.

Braucht, Brakarsh, Follingstad, and Berry (1973) found that the narcotic addict tends to be immature, insecure, irresponsible, and egocentric although the way these qualities fit together within a particular addict was not clear. According to Le Dain (1973) some agreement exists that the narcotic addict suffers from a personality disorder. However, the nature of that disorder receives little agreement. Le Dain (1973) essentially corroborates the Braucht, Brakarsh, Follingstad, and Berry (1973) findings. Referencing the predominance of vague diagnostic categories and contradictions in the research, Le Dain (1973) summarily stated

there has been little success in identifying an addictive personality (p. 790). Jamison (1972) previously identified the use of vague diagnostic categories in the research to account for lack of agreement. As the search for personality characteristics extends beyond the clinical addict, it becomes more difficult to distinguish between the addict and non-addicted people. Le Dain (1973) summed up the review by stating that the narcotic addict does not differ on basic personality dimensions or attitudes from non-users and that "reasons why some persons become dependent and others do not must be sought elsewhere" (p. 794).

Problem and dependent use of alcohol presents a similar picture. Braucht, Brakarsh, Follingstad, and Berry (1973) have found the adolescent problem drinker to be generally lacking in personal controls as indicated by relatively high aggressiveness and impulsiveness. Le Dain's (1973) broader review concurred. Le Dain (1973) also noted that the search for an alcoholic personality has not been successful and compared it to the lack of success in identifying an addictive personality for narcotic users. Contrary to that found with the non-sanctioned drugs, there has been no attempt to project characteristics of the problem alcohol user to users per se.

Defective mental health characteristics are also illusive with the hallucinogenic user. The Braucht, Brakarsh, Follingstad, and Berry (1973) review is confused since it includes a broad range of substances including LSD, amphetamines, and marijuana. Le Dain (1973) has maintained a more useful separation between these. Hallucinogens for this discussion have been restricted primarily to LSD (the most prominent hallucinogen excluding marijuana). Marijuana has been considered separately below. Once again most of the research has been limited to clinical cases and it is not possible to determine whether the psychopathic characteristics preceded, developed concurrently, or subsequent to the hallucinogenic drug use. These themes have recurred with the different types of drug use. In general, heavy and clinical hallucinogenic users are found to exhibit personality disturbances, poor adjustment (Barron, Lowinger, & Ebner, 1970), difficulties in sexual identification, dependency needs, aggression (Welpton, 1968), personality disorder, or borderline psychosis as indicated by abnormal MMPI (Blumenfield & Glickman, 1967; Smart & Fejer, 1969), and character disorders (Cohen & Klein, 1970). Braucht, Brakarsh, Follingstand, and Berry (1973) have noted that personality characteristics attributed to hallucinogenic

users are too numerous to list and there is little consensual validation of these among many contradictory reports. Le Dain's analysis is even more cautious.

The familiar picture of personality correlates of non-medical drug use repeats itself in consideration of amphetamine and amphetamine-like drug use. Again, the literature has concentrated on the clinical dependent and/or high dose user (Le Dain, 1973). The same cautions apply for implying causation from the primarily correlative evidence. However, an additional complicating factor accompanies high dose, long term stimulant use. It has been documented that heavy use of amphetamine (and other stimulants such as cocaine) will result in a temporary paranoia of the schizophrenic type (Brecher, 1972; Le Dain, 1973). The extent to which this effect complicates the literature is unknown. Le Dain (1973) referred to speculations that particular personality types might be predisposed to the use of these drugs. As with similar attempts to identify an alcoholic or addictive personality, "there is conflicting evidence regarding the hypothesis that a particular personality structure predisposes certain individuals to either occasional or compulsive use of amphetamines" (Le Dain, 1973). Among the characteristics attributed to heavy amphetamine users have been

depression (Levine, Lloyd, & Longdon, 1972), psychopathic personality (Beamish & Kiloh, 1960), and personality disorders ranging from neurotic or prepsychotic to paranoid schizophrenia, psychopathology, and manic depression (Hampton, 1961). However, Le Dain (1973) acknowledged that these and other similar studies are based primarily on clinical research with unrepresentative samples, without control groups, or objective measures. Although some authors have conjectured the psychopathic conditions preceded the amphetamine use (e.g. Levine, Lloyd, & Longdon, 1972), evidence is lacking on causal relationship. As found with the opiate narcotic literature, the use of vague diagnostic categories with primarily clinical cases has precluded consensual agreement between studies.

Relationship of cannabis use to psychological characteristics demands separate treatment since there is a large amount of literature pertaining to non-clinical users. The reasons for this are that marijuana is the most commonly used non-sanctioned drug and only a small proportion of users come to the attention of treatment specialists. A variety of psychological characteristics have been reported to be more common among users than non-users. As Le Dain (1972) observed, available evidence is primarily correlative

and cannot be interpreted in terms of causation. Users of cannabis have been described as

> more open to experience, unconventional, individualistic, spontaneous, adventuresome, socially poised, impulsive, suggestible, rebellious, alienated, pleasure-seeking, anti-authoritarian, creative, aesthetically oriented, opinionated, unreligious, socially maladjusted, dissatisfied or depressed (Le Dain, 1972, p. 92)

relative to non-users. Despite this wide variety of differences reported in various individual studies, consistent differences have not been found between users and non-users (Le Dain, 1972). Re-examining the list of characteristics reveals few that could be considered undesirable. Those characteristics that could be judged undesirable have been associated primarily with heavy cannabis use (Braucht, Brakarsh, Follingstad, & Berry, 1973; Kalant, 1975; Le Dain, 1972).

In summary, the available literature has not consistently and unambiguously demonstrated the existence of adverse psychological characteristics which distinguish between users and non-users of the non-sanctioned drugs. Prominent observers have repeatedly found in their reviews of empirical evidence that the majority of non-medical drug users are not suffering from personality disturbances of mental illness

that significantly distinguishes them from non-users (Brecher, 1972; Einstein, 1975; Fort, 1969; Goode, 1972, 1973; Kalant & Kalant, 1971; Leavitt, 1974; Le Dain, 1973; Nowlis, 1975; Wells, 1973).

Part III--Unique Orientations in Drug Education

Introduction

A number of unique orientations to drug education are explored in relation to their rationales, empirical support, and potential. The program orientations are: shaping attitudes through cognitive dissonance, application of reinforcement techniques, values clarification and values teaching, and alternatives to drug use. Each of these orientations have received some prominence in the literature.

Shaping Attitudes Through Cognitive Dissonance

Swisher and Horan (1972) and Warner et al. (1973) attempted to change attitudes toward non-medical drug use by inducing cognitive dissonance in the student. The procedure has been designed from the theory of cognitive dissonance presented by Festinger (1957) and refined by Rokeach (1971). The theory of cognitive dissonance is based on an assumption that the individual strives for consistency among his/her opinions, attitudes, values, and behaviors. Dissonance (that is, inconsistency) between any of these is

assumed to be psychologically uncomfortable, causing the individual to seek relief by reshaping or removing the dissonant elements. According to Rokeach (1971), dissonant states may be induced by identifying and making a person aware of inconsistencies within his/her attitude-value system that were previously below the level of awareness. Theoretically, the dissonance could be removed by changing either the value or attitude. However, Rokeach (1971) considers values to be the determinants of attitudes; therefore, a change in attitude is more likely when conflict occurs. This last point is critical to the studies in drug education utilizing the cognitive dissonance format.

Swisher and Horan (1972) attempted to manipulate cognitive dissonance in undergraduate students. Subjects were randomly assigned to control and experimental groups. A 14 item drug attitude scale and a value preference inventory were used. The latter instrument determined if the experimental subjects preferred "direct experiences" (such as playing favorite sports) or "indirect experiences" (such as watching favorite sports). On the basis of this inventory two groups were identified. Both groups were then given an "activities preference scale" in which each subject learned of their own preferences for direct or indirect experience.

It was hypothesized that drug use mediates experience, therefore, those preferring direct experience could be expected to change attitudes (to anti-use) when this dissonant arrangement was pointed out. The group preferring indirect experience was not expected to change. As expected, the direct experience group became significantly more conservative in their attitudes towards non-medical drug use. The indirect experience group showed no change in attitudes. The authors advised caution in interpretation since sample size was small (N=34, grouping information was not provided), and participation was chosen by the subjects out of a number of alternatives. Inferences outside the sample are not advised. Warner et al. (1973) also included a cognitive dissonance group in their study of reinforcement counselling and model reinforcement counselling (discussed in the succeding section). In this case, the cognitive dissonance group showed no significant effect.

Although the cognitive dissonance approach may have some appeal (Goodstadt, 1974) the available data does not permit optimism regarding its potential as a preventive measure. Apparently the authors have not been convinced that further study is warranted. Although reference to these studies continue (Swisher, 1974), further work has

not been published. McClintock (1972) has summarized the state of the theory of cognitive dissonance as follows:

> Dissonance theory is a highly abstract theory with a very limited and perhaps insufficient set of definitions. It is imprecise in specifying the particular conditions which give rise to dissonance or what forms of behavior will ensue. Its major contribution to date has been to stimulate a wide range of empirical studies, and to provide a highly abstract framework within which a wide range of phenomena can be integrated. But until the variables in the theory are more explicitly stated, it will continue to function primarily as a heuristic framework for . . . one cannot systematically derive hypotheses to test its validity in the 'real' world. (p. 76)

It is unlikely that the cognitive dissonance theory would have utility at this time in attempting to discourage non-sanctioned drug use.

Application of Reinforcement Techniques

A series of studies have been conducted to examine the effectiveness of selective reinforcement on attitudes and behaviors toward non-sanctioned drug use. These studies were based on reinforcement counselling and model-reinforcement counselling--both of which are based on principles of operant conditioning (Warner & Warner, 1975). According to Swisher (1974) the reinforcement approach is based on a model "which simply contends that pro-drug attitudes result

from all of the reinforcement (attention) given to the appealing aspects of drug use" (p. 151). The technique is implemented to "offset reinforcements" (p. 151) and provide at least "equal time" (p. 151) to reasons for not using drugs. These assumptions were not verified.

Swisher et al. (1972) studied the effects of four approaches to drug education on the knowledge, attitudes, and behavior of ninth and eleventh grade students. All students had received a "standard" drug unit which was part of the health curriculum. Students were randomly assigned to four experimental programs. One group served as a baseline control and was not given further treatment. The remaining three groups were subjected to a designated counselling group experience. One group was termed "relationship counselling" where the neutral counsellor moderated the exploration of any topic of drug use they chose to discuss. The two remaining groups received "reinforcement counselling" where the counsellor was to focus discussion on alternatives to drug use and positively reinforce statements "which represented behavior and attitudes that would result in not becoming involved with drugs at some later day" (p. 329). Each of the two reinforcement counselling groups also contained two college age role models who were

either non-users or ex-users. These models were intended to facilitate "the discussions toward reasons for not being involved in drug abuse" (p. 329). Treatment groups met once per week for six weeks. A significant knowledge gain was noted between the three treatment groups. No differences or changes in attitude or drug use were found. Swisher et al. (1973) conducted a study of similar design for college undergraduates in a compulsory health course. Three treatment groups were essentially the same as the "relationship counselling" and "reinforcement counselling" groups in the Swisher et al. (1972) study. Another experimental group used a discussion approach where there was "a rational consideration of the issues surrounding the problems of drug abuse" (p. 232). A control group was selected from other health classes where non-medical drug use was not discussed. Knowledge gain was found in the four experimental groups. No differences in knowledge was found between the groups. Small significant changes in attitude were noted in the experimental groups in a pro-drug use direction. No changes were noted in reported drug use. Warner et al. (1973) attempted to "change ninth graders' attitudes toward drugs in positive direction" (p. 50). The study took place under a similar design reported in the Swisher et al. (1972) study

above. One group received only the standard drug unit in the health programs. A second group was a "behavioral counselling" condition where verbal and non-verbal reinforcements were provided by the counsellors for statements interpreted as anti-drug use attitudes (positive), "expressions of alternate modes of experiencing life" (p. 51) (positive), and pro-drug attitudes (negative). A third group attempted to arouse cognitive dissonance between pro-drug use attitudes and other values. A fourth group was a placebo condition where the counsellor accepted student comments in a non-judgmental fashion. The program took place over six weeks in one 45 minute period per week. Results indicated an attitudinal improvement (that is, anti-drug use) in the behavioral counselling group. Since that group had significantly more negative attitudes to drug use before treatment, the authors suggested the change might be spurious. Other differences were not significant.

Warner and Warner (1975) also presented a "behavioral model" for drug abuse prevention. Their recommendations were based on the "reinforcement counselling" and "model reinforcement counselling" methods used in the three studies above. An important difference is to be noted over the previous studies. That is, the authors suggest that

participation must be voluntary and with full knowledge of the intent of the program. (This has been discussed in detail in Chapter V--Educational Integrity and Ethical Responsibility.) It is also noted that Warner and Warner (1975) have not referred to the previous studies in which the senior author participated. This is taken to reflect the fact that results of those studies were not encouraging and might detract from the model presented. Empirical evidence does not support the assumption that the model described would have the intended effect.

Values Clarification and Values Teaching

Swisher (1974) has referred to the confusion between the concepts of values clarification and values teaching. This same confusion has occurred in other areas of education as well. Values clarification is an educative process whereby the student is encouraged to identify and resolve value conflicts by carefully weighing consequences and choosing freely among the alternatives. The role of the teacher in this process is to provide non-judgmental guidance. Values teaching is an attempt to transmit identified values to the student and thus seeks a specified set of outcomes. Separation of these concepts occur more successfully on a theoretical level than on an operational level. Swisher (1974) and

Swisher and Piniuk (1973) questioned the present viability of the values clarification orientation for drug education on the grounds that the flexibility, creativity, and improvisation required of teachers may be beyond existing capabilities. This is confirmed by the Alberta experience with values clarification in the social studies program (Downey Research Associates, 1975; Ledgerwood, 1975).

Even on the ideal abstract level, the values clarification approach to drug education has been criticized by a New York State legislative committee (Betros, 1974). "To the extent that such instruction is unclear regarding appropriate social values [emphasis added], which we find is often the case despite the misleading caption of "values clarification" instruction, such instruction may directly, if unwittingly induce experimentation" (p. 9). The committee not only has demonstrated a lack of understanding of values clarification, but also made clear their desire to inculcate the predetermined values. The Betros (1974) statement is important since it clearly states a preference for values inculcation over values clarification. Other programs or prescriptions have euphemised or hidden their intent for compliance by claiming to allow and assist students to make up their own minds or arrive at their own decisions or to

clarify their values. Those whose values are not congruent with the preferred values must be the target for values restructuring rather than clarification. In any event, the values approach is complex and has taken on different rationales and procedures. For purposes of discussion several programs and prescriptions have been considered under the broad heading of values clarification and values teaching.

The Coronado Plan. The Coronado Plan (Coronado Unified School District, 1973) has been a major influence in the values orientation for drug education. Because of its apparent empirical support and visibility, it has gained national (and international) prominence. The program is best described as both values teaching and values clarification. It derives its rationale from some volumous research reports (Carney, 1970a, 1970b, 1971a, 1971b, 1971c) based on the Risk Taking Attitudes Values Inventory (Carney, 1972) and a report on advertising (Kanter, 1970).

According to program guides (Coronado Unified School District, 1973) "among the influences which lead young people into the abuse of drugs are poor self-concept, unsatisfactory relationships with adults (including parents) and peers, confusion regarding risk taking activities, and the subtle effect of advertising and drug-oriented music" (p. 9). The

Coronado Plan defies adequate description since it is designed to be fully integrated into the existing curriculum. Because of this, the particular course of the program is not predictable since various and undetermined foci may be operationalized. However, the intent of the program is contained in the following quotation.

> 1. Developing and strengthening self-concept and interpersonal relationships . . .
> 2. Assisting youngsters to understand the valuing process and the effect of a person's values on behavior toward others and on how others behave toward us . . .
> 3. Providing opportunities for students at all grade levels to develop skills that will encourage them to consider alternatives and consequences before making decisions . . .
> 4. Understanding the purpose, function, and techniques of advertising so that all advertising may be looked upon more objectively. Decision making and problem solving are developed . . .
> 5. Presenting accurate, factual information about drugs, their use and misuse (p. 13)

According to Carney (1971c) "there is substantial evidence that the Values drug abuse program has produced changes of the type hypothesized" and with the help of the Carney Risk Taking Attitudes Values Inventory (1972) has lead to "one of the major breakthroughs in not only the prevention of drug abuse, but also in the shaping of more productive attitudes and behaviors" (p. 120). An examination

of the studies upon which these conclusions were based (Carney 1970a, 1970b, 1971a, 1971b, 1971c) does not support the conclusions. For instance, major problems in the design and execution of the research were present and recognized by the researcher (Carney, 1971c). These included: "inadequacies" in the Risk Taking Attitudes Values Inventory (since corrected), absence of a "placebo" control, inability to independently determine the contributions of the cognitive and affective aspects, inability to identify or control for drop outs, inability to use appropriate test-retest statistics (California law prohibits the identification of students), doubtful adequacy of senior high school comparison groups, absence of experimental groups in grade seven and eight, and no pre program measures available for grade six subjects (gleaned from Carney, 1971c by Goodstadt, 1974). In addition, the reports relied heavily on correlation, which included non-standard (and questionable) application of the Pearson product-moment calculation (see Carney, 1971b, p. 5). Causation was added to the correlational data. Not withstanding the effects of these deficiencies, an examination of significant effects may be made. According to Carney (1971c), the data from the fourth and fifth grades offer "persuasive evidence" (p. 78), "striking evidence" (p. 101), and

"impressive evidence" (p. 94) that the desired changes were taking place. Goodstadt (1974) reviewed the evidence upon which these conclusions were determined and found "a relative paucity of statistically significant findings" and a similar "scarcity of statistically significant findings . . . of the differences between experimental and control groups are examined in terms of risks and gains associated with the various behavior" (p. 126). Despite these observations, Goodstadt (1974) considered the study important on the basis of patterns in the predicted direction even though these were not statistically significant. Other authors have been less optimistic. Randall and Wong (1976) observed that statistically reliable changes "were not very great at any one age" (p. 13). Berberian and Thompson (1975) found that although some degree of "success" was reported, serious design flaws compromised validity. Examination of the Coronado data by disinterested and independent observers fails to concur with the significance and degree of the claims made by the program promoters. Even if changes in the "desirable" direction can be accepted as valid, such changes are of low magnitude.

Keystone Central School District Study. A Swisher and Piniuk (1973) study attempted to "discover the most effective

educational program for preventing drug abuse" (p. 2). Four different program orientations were examined over the grade school range as follows: values clarification (grades four to twelve); mental health development (grades one to six); behavioral alternatives (grades seven to twelve); and curricular integration (grades seven to twelve). Few details were provided regarding methodology, implementation, assignment to conditions, duration, timing, or dependent measures. Pre and post program measures included a behavioral inventory, a value scale, a drug use scale, drug attitude scales (general, personal, and law), knowledge of drugs and alternatives to drugs. Results showed elementary students to have significantly improved in values scores and in teacher reported behavior under the mental health program. Those under the values clarification program did not change in values but became more liberal in attitudes (pro drug) towards drug use. Secondary school results showed increased knowledge and more liberal attitudes toward drug use for all three orientations, reduction in reported use for the values clarification orientation, and no changes in attitudes toward law or reported participation in alternatives. The reduction in reported drug use must be interpreted with caution since that group reported significantly greater drug use before the program.

Apparent results show a superiority of the mental health approach over the values clarification at the elementary level and a superiority of the values clarification approach over other approaches at the secondary level. However, degree of desired outcome qualified by neutral or negative effects raised questions as to efficacy of these orientations.

Corder's (1975b) Prescription for Values Clarification. Corder (1975b) has presented rationale and suggestions for values clarification in drug education programming. Interestingly, reference was not made to the Coronado program or the Swisher and Piniuk (1973) study.

According to Corder (1975b) the premise for values clarification is that "behavioral problems among the young result not only because of emotional disorders but also because of a lack of 'clarity in their value system'" (p. 110). Using ideas presented by Raths, Harmin, and Simon (1966), Corder argues that a person with "unclear" or "confused" values would be consistently found among behavioral problems in the schools. The question is asked, "which of these at the two ends, the 'clear' or 'unclear', would be most vulnerable to drug experimentation, committed use of drugs, or for that matter would display any negative behavior such as

delinquency and sexual promiscuity?" (p. 113). The question is answered by, "The obvious answer is that those young people who are apathetic, flighty, uncertain, inconsistent, over-conforming, over-dissenting, or role playing, are going to be most vulnerable" (p. 113). Corder's (1975b) attempt to attribute these (undesirable?) characteristics to non-sanctioned behaviors cannot be empirically supported. On the other hand a person with "clear" values would be most likely to be "drug abuse resistant" (undefined). Empirical support is also lacking for this assumption. The values clarified person would not need to "manufacture an artificial" (p. 113) environment by using drugs (recall previous discussion on the use of terms such as "artificial"). However, Corder does allow that some young people with clear values might choose to use drugs. "If . . . a youngster decides to experiment with drugs, it would help if he could be clear about his reasons for doing so, and thereby liberate himself of the influence of other people's reasons for indulging in the experience" (p. 114). Strategies for clarifying values are presented as recommended by Raths, Harmin, and Simon (1966). A major difficulty with the reasoning presented by Corder (1975b) is that there is no supporting evidence. It is not known if drug users (or

abusers) are more likely to be unclear in their values or if non-users are clear in theirs. Another difficulty is a failure to make clear the meaning of a "drug abuse resistant" individual. Discussion alternates between abuse--sense I and abuse--sense II conception. Under abuse--sense II (undesirable consequences), one might be tempted to accept Corder's (1975b) rationale because this type of non-sanctioned drug use can be demonstrated to be associated with (not necessarily caused by) various maladaptive personalogical characteristics. Although information is not available, it might be conjectured that a similar situation might be expected with "unclear values" (however defined). Under abuse--sense I (any use of a non-sanctioned drug) there is no reason to expect the majority to have unclear values compared to the non-user.

Moral Development. A single unpublished study has been reported which attempted to examine the effect of a moral growth and development program on non-sanctioned drug use (Briskin, cited in Randall & Wong, 1976). The orientation was based on the hypothesis that students at higher stages of moral development would decide against drug abuse (undefined). The major technique involved presentation and discussion of "moral dilemma" situations involving drugs. The

program was presented to sixth grade students and compared to a control group who received a standard drug curriculum. Results showed gains in knowledge for both the control and experimental groups. Little change was noted in communication skills or level of moral development. Drug use was not determined.

Confluent Drug Education. Strandmark (1974) has presented a confluent model for drug education. As described, the confluent model is indistinguishable from a values orientation, especially values clarification. Confluence refers to the flowing together or merging of the cognitive and affective aspects of learning. Strandmark (1974) has used Maslow's (1962) hierarchy of needs and Lasswell and Rubinstein's (1966) value categories as the basis for the recommended model. Previous reference has been made to Strandmark's (1974) premise that drug misuse (undefined) is a coping mechanism or escape and " a 'symptom' of deeper emotional or behavioral problems" (p. 102). However, determining the intent of the program is difficult because of the alternation of meaning between non-sanctioned use (abuse--sense I) and harmful use (abuse--sense II). Reference is made to the goal of helping the individuals successfully meet their needs before "becoming physically or emotionally

dependent on drugs" (p. 103), to strengthening self-concept so the individual will have less reason to escape through "heavy" use of drugs, and to helping the individuals meet their interpersonal needs without "relying upon artificial, chemically-induced means" (p. 104). (The use of coping mechanisms, escape, and "artificial" in drug education rationales has been discussed in previous sections.) Three strategies are offerred--exploration of values, process of decision making, and development of communication skills. Liberal reference is also made to developing a strong resilient self-concept. Strandmark's model has not been tested.

Further Comment. The lack of supporting evidence for the values approaches introduces doubt regarding the potential of these programs to prevent drug abuse. As these programs also rely upon the correction of defective self-concept or mental health and the development of decision making skills, doubt must also be raised as discussed under sections on Cause and Effect (Chapter II), Improving Self-Concept (Chapter IV), Correcting Defective Psychological States (Chapter IV), and Improving Decision Making Capacity (Chapter IV). This latter point (improving decision making) especially applies to the Coronado Plan. According to the Coronado rationale, drug use (undifferentiated) is a high

risk, low gain activity. Carney (1970b) has defined the task of education to make certain young people realize this. The high risk, low gain assumption was accepted without question, and continues to be a major basis of the program. Since most non-sanctioned drug use does not result in harm, and the users perceive benefit, it is difficult to accept the attempt of the Coronado Plan to manipulate the perception of these on grounds of honesty alone. This has been detailed in Chapter V under Educational Integrity and Ethical Responsibility.

Alternatives

Reference to alternatives has become commonplace in the drug education commentary. Its popularity is rivaled only by the values orientation. Indeed, the Coronado Plan included reference to alternatives in its rationale and the Cohen (1973) alternatives approach has included reference to values clarification. Reference to alternatives is found as well as concepts as life style, life skills, or life coping skills with similar meaning. A recent statement by Lalonde (Minister of Health and Welfare Canada) takes this view and implies the need for alternative behaviors for reacting to stress. "Alcohol abuse and other non-medical drug abuse problems stem from how people are taught to react

to stressful situations" (Edmonton Journal, 1976). Programs based on the supposition that drug use is a coping mechanism imply that their prescriptions will provide better or more acceptable alternatives to the non-sanctioned drug use. Most activities have been offerred as an alternative to non-sanctioned drug use. One observer has commented "The concept 'non drug alternatives to drug abuse' can become merely another catchy phrase which most people can agree on, but which appears to be too abstract to grasp and use" (Einstein, 1975, p. 182). More than any other approach described, alternatives raises the issue of confusion in meaning. This is because the rationale exists largely on a conjectural-philosophical level with poor specificity and little research. For example, "constructive", "superior", and "satisfying" alternatives in Cohen (1973) and "desirable" and "rewarding" alternatives in Emrick (1971) may only be defendable as "socially acceptable" alternatives. Dohner's (1972) commentary on alternatives confuses the reader with ambiguities introduced by reference to "proper" use of drugs, "intended" purpose, "healthy" development, "meaningful" work, and "meaningful" pleasure. All fail to define the meaning of abuse and frequently use it interchangeably with use and misuse. Upon these indeterminate foundations,

general philosophical and value-laden prescriptions are derived. It is difficult to determine if the alternatives orientations have resulted in unique programs or if the label has been used only for its current appeal in programs which otherwise would have been referred to in other terms. Few descriptions are available in the existing literature. Several years ago physical educators were unable to obtain financial support for outdoor education. Yet, under the promise to prevent drug abuse Cohen (1973), Dohner (1972), and Low (1976) have recommended many of the same type of activities. Cohen confirms these reservations in his advice to "introduce your program as an anti-drug abuse program" because "it is difficult to resist well planned innovation billed as drug abuse intervention" (p. 34). Research and evaluation is almost non-existant for alternatives approaches, with the exception of two unpublished studies. Previous reference was made to the Swisher and Piniuk (1973) study where four approaches including alternatives were being examined. The alternatives approach "involved discussing interesting stimulating and meaningful activities in a group and encouraging individuals to share their experiences and to pursue their hobbies etc. to a greater extent" (p. 9). The other study (Swisher & Shroeder, 1973) was cited in

Swisher (1974) without detail. Neither showed any difference between the alternatives and control groups. In the absence of relevant empirical data, two prominent alternatives orientations have been selected for analysis.

Alternatives by Cohen (1973). The alternatives orientation recommended by Cohen (1973) is similar to that proposed by Emrich (1971) and Dohner (1972). The drug user is not seen in terms of defective psychological states, but rather in terms of unfulfilled needs and aspirations. Cohen (1973) considers the alternatives orientation a useful and perhaps necessary adjunct to objective drug education. It is intended to eliminate "the demand for drugs by generating more satisfying alternatives to meet the legitimate needs and aspirations of individuals" (p. 2). However, discussion becomes confused as to whether the recommended approach is to prevent "dependence on chemicals" (p. 2), "immoderate drug use" (p. 3), undefined abuse (p. 12), "serious drug dependency" (p. 12), or undifferentiated drug use. The author does, however, suggest that a goal of total abstinence in the initial stages is unrealistic. The approach is also offerred for assistance in rehabilitation of chronic users. A suggestion is made that the alternatives activity should be selected to be "incompatable with dependence on chemicals"

(p. 2). An attempt to explain this concept at a latter point (p. 28) dropped the dependence qualification and generalized to undifferentiated use. The concept of incompatability is left relatively unresolved with the suggestion that it can be subtle and may take time to be evident to the user. The Cohen (1973) rationale criticizes "traditional" methods for their inability to get at motives and needs behind drug abuse (undefined) rather than to deal with the cause as claimed by his alternatives approach. (This reference to unspecified traditional programs is unlikely to draw much reaction, since most program proponents do not consider their efforts traditional. However, contrary to Cohen's remarks, almost all programs are based on a conception of cause.) Cohen (1973) speculates on level of experience sought, corresponding motives, needs, aspirations, and probable drugs to meet these. Examples of alternatives that might be expected to meet the same needs and be incompatable with drug use are suggested.

In the absence of empirical support, the Cohen (1973) alternatives prescription is tenable for the prevention of dependent or immoderate use (abuse--sense II). The availability and enablement of alternatives participation may assist the individual to avoid becoming preoccupied with

non-medical drug use. However, despite Cohen's (1973) reference to an abstinence goal being unrealistic (in the initial stages), discussion proceeds as if the alternatives approach could prevent undifferentiated drug use. The immoderate or dependent group is only a small proportion of users (or prospective users). As with other approaches, program justification would be difficult if it applied only to a small proportion to whom it was intended, therefore, program proponents must perceive or imply that it would apply to the larger group as well (that is, undifferentiated users). Drawing from some related (but limited) evidence, there is reason to doubt the extended applicability. Hogan, Mankin, Conway, and Fox (1970) found regular marijuana users in possession of broadly based interests and intellectual curiosity. Non-users tended to possess a narrow range of interests. Examining Cohen's (1973) suggestions there is no reason to associate abstinence with the alternative activities presented. Argument that Cohen's alternatives may <u>increase</u> drug use is as tenable as the opposite effect. Non-medical drug use may be incompatable with alternatives participation <u>while</u> the person is engaging in the alternatives activity. Heavy, involved, excessive, immoderate, or dependent use may be incompatable with any of the recommended

alternatives, since such use is associated with longer term physical or psychological compromise which could limit optimal performance or enjoyment. However, it does not follow that the alternatives activities would necessarily discourage experimental, casual, or recreational drug use (that is, the majority of drug use). In some instances, increased social participation associated with alternatives participation may be expected to increase non-medical drug use. For example, one of the alternatives suggested by Cohen (1973) is sky diving (p. 26). A "custom" of the local parachute club is to patronize the nearest tavern after jumping ceases for the day. Parties organized by or attracting alternatives participants typically include both sanctioned (alcohol, nicotine, caffeine) and non-sanctioned (especially cannabis) drug use. It is, therefore, suggested that the alternatives approach as described by Cohen (1973) and others is primarily applicable to the prevention of undesirable consequences associated with non-medical drug use rather than to use per se.

Developing Personal Responsibility. The development of personal responsibility is included in many drug education programs (for example, Coronado Unified School District, 1973; Southern Regional Education Board, 1972; Stamford

Board of Education, 1971). It is also seen as one of the enduring goals of education (Department of Education, 1975). Whereas most drug education programs make reference to personal responsibility as one of the expectations, one program focuses on the development of personal responsibility as the major concept. According to Low (1976) "The most significant contribution public education can make in controlling intoxicant problems is to encourage the development of personal competence and responsibility" (p. 44). Personal competence and responsibility are used as general concepts and not interpreted in terms of non-sanctioned drug use. Low views non-medical drug use as a means of "experience management" and reasons that people may develop competencies in other non-drug means of managing experience. Discussion includes almost any type of activity in which people might participate. "Universally available" activities such as sleeping, eating, conversation, listening to music, watching things, running, walking, fidgeting, and reading are discussed as other experience management techniques. The significance of the discussion is found in a later section where the author states, "A broad repertoire of activities is a reasonable defense against becoming excessively dependent on one particular type of activity" (p. 45). (Although this

reasoning may hold for preoccupied drug use, "a broad repertoire of activities" is also characteristic of cannabis users.) For this purpose the universally available activities "should be consciously cultivated and developed as a repertoire of options" (p. 45). A basic issue to the Low (1976) prescription is the ability to manage the quality of experience by producing change. "If we seriously want our children to be personally responsible, to be able to understand, produce, and control change, then we must provide them with learning and growth opportunities that develop the 'whole self'" (p. 47).

Several observations may be made concerning the Low (1976) prescription. The preventive intent with respect to non-medical drug use has not been explicitly stated--except perhaps in general terms of controlling intoxicant problems. However, Low's (1976) sensitive presentation of the nature of the problem and acknowledgement that most drug use does not result in harm, suggests a concern with undesirable consequences rather than use <u>per se</u>. Assuming this to be the case, Low's prescription might apply to the small proportion of users (and prospective users) who would suffer undesirable consequences. For similar reasons to those presented in reaction to Cohen's (1973) alternatives approach,

it is unlikely that it would apply to the majority of non-medical or non-sanctioned drug users. Low's (1976) orientation is a highly philosophical formula for living. In fact, the author admits that this orientation is not different from the overall objectives of most school systems. (For example, see the statement of goals for basic education, Department of Education, 1975.) The justification offerred for duplicating intent is that schools have not been adequately meeting those goals. Whereas few educators would disagree with the statement, a troublesome issue arises. This applies beyond the Low (1976) program since a trend in drug education has been to greater abstraction and inclusion under the promise to prevent non-sanctioned drug use. A number of programs, including Low (1976), also promise to have effect on other problem behaviors although these are seldom specified (for example, see Coronado Unified School District, 1973; Einstein, 1975; Southern Regional Education Board, 1972, 1973). One article has suggested that drug education should be part of the educative process and indistinguishable from it (Edwards & Holloway, 1975). The point is, can drug education programs be justified when their intent duplicates that of established education programs? An argument that education has not done an adequate

job of meeting its goals is irrelevant. Changes are being constantly made in education to do a better job irrespective of those under the drug education banner. There is no justification that goals would be better met because they are being sought under the more restrictive drug education label. For example, the recommendations offerred by Low (1976) are found in existing education programs (especially perspectives for living, health education, physical education, and social studies). Although the operationalized experiences may differ, the intent does not. However, this is obscured by semantic complexity in Low's (1976) program description. Low (1976) presents standard educational thought obscured by a new vocabulary and offerred as a drug problem solution. His unique presentation is an interesting and enlightening conception although it is difficult to determine what relationship this would have to the "management of intoxicant problems" beyond that of existing education programs. A further observation is that no supporting data is available nor is it likely that any will become available in the near future. Low (1976) excuses his approach from research or evaluation stating, "Our background knowledge, research tools, and methodologies are presently not adequate to tackle these issues critically on anything but a tentative and exploratory scale" (p. 41).

CHAPTER V

RE-EXAMINING THE ROLE OF THE SCHOOL

Part I--Educational Integrity and Ethical Responsibility

Previous sections have referred to the lack of educational integrity in many drug education programs. Critics have identified instances of informational error and selected the scare tactic for special condemnation. Concern also arose for the emphasis on information-giving. However, the concern for educational integrity and honesty have been over shadowed by the insistence that drug education must prevent drug abuse. This has often resulted in a compromise of the educational process. As Fulton (1972) observed, "We have become so convinced of the nobility of our objectives that we easily rationalize our deceit and dishonesty" (p. 33). It is generally assumed that the newer generation of drug education thought has brought a renewed concern for educational integrity and honesty. However, Brown's (1976) analysis expressed doubt that this has translated into practice.

Ethical questions arise in direct relation to the intention to manipulate attitudes and behaviors. "At question is the issue of whether we regard the educational process as a means of teaching one how to learn - to search for truth - or as a means of controlling behavior (psychologists might call

this 'shaping')" (Fulton, 1972, p. 33). Several researchers have directly stated their intent to shape or condition behaviors. Others have been less direct even though their procedures are similar. Carney's (1971c) research on the Coronado program found, "the values oriented approach . . . has lead to one of the major breakthroughs in . . . the shaping [emphasis added] of more productive attitudes and behaviors" (p. 120). Similarly, Swisher and Piniuk (1975) referred to the "systematic shaping" of attitudes to create "healthy" attitudes toward non-sanctioned drug use. In their desire to manipulate attitudes and behaviors, scientists have applied behavior modification techniques in ways that are questionable under prevailing ethical codes. Concern for ethical standards has not been prominent in drug education. For instance, Warner, Swisher, and Horan (1973), Swisher, Warner, and Herr (1972), and Swisher, Warner, Spence, and Upcraft (1973) attempted to create anti-drug use attitudes by applying principles of reinforcement theory. Group leaders in these studies attempted to "use subtle verbal and nonverbal reinforcements to student-initiated statements reflecting an unwillingness to use drugs" (Swisher, 1974, p. 151). According to Swisher (1974), students were informed that they could withdraw from the group at any time,

although this was not clear in the original reports. Students were also informed that the intent of the program was to "encourage healthy attitudes towards drugs and to encourage participation in alternatives" (Swisher, 1974, p. 151). There was no indication that the students were aware that "healthy attitudes towards drugs" meant anti-drug use attitudes,[24] nor aware of the covert procedures being used. The question that arises is "To what extent can we accept the manipulation of a person's attitude (or behavior) by means of which they are unaware for purposes to which they have not agreed" (Brown, 1976, p. 21). Ethical codes for counselling psychology and human experimentation would question these practices under concepts of informed consent, deception, and/or manipulation (for example, see Psychologists' Association of Alberta, 1970). Warner and Warner (1975) discussed this in relation to the application of behavioral modification techniques in drug education.

> In a drug prevention program the participants must understand that the objectives of the programs are to consider ways of avoiding the use of drugs; if they cannot

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[24] One of the authors in another article (Swisher & Abrams, 1974) admitted to the arbitrariness of terms such as "healthy".

> accept those objectives, they should be allowed to leave the program. In short, a behavioral approach does not demand that someone change in a direction that he does not believe in. (p. 102)

Whenever the intent of a program is to manipulate behavior (or attitude) surreptitiously, the question of ethical violation must arise.

The intent to create compliant attitudes and behaviors by biasing the educational process is noted in other commentary. Richard Nixon (former President of the United States) stated, "There is no priority higher in this administration than to see that children and the public learn the facts about drugs in the right way and for the right purposes" (Nixon, 1971, p. 1). Are we to believe the "facts" can be presented in the "right" way in order to achieve the "right" result--without introducing bias or compromising honesty? Often, sincere concerns about drug use have resulted in statements which appear to promote expediency over honesty. Research on the Coronado Plan suggested, "educational or other efforts should be directed to increasing perception of risk and decreasing perception of gain from 'undesirable' (depriving) behaviors in contrast to 'desirable' (enhancing) behaviors" (Carney, 1970b, p. 6). The author did not suggest making perceptions more accurate or representative but rather that perceptions

should be manipulated for creating compliant behaviors. The New York State legislative Committee expressed concern for the values clarification approach in drug education (Betros, 1974). "To the extent that such instruction is both accurate and honest, we find that it is neutral, in that most materials relating to drugs are inescapably fraught with controversy, and therefore cannot specifically deter chemical substance abuse" (p. 9). Other existing strategies were similarly discounted. The document has, in effect, rejected accuracy and honesty in drug education since it is unlikely to have the desired effect.

A recent study examined the manipulation of "fact valence" on attitudes towards fictitious drugs (Halliday, 1976). Experimental subjects were given fact presentations that were all negative, half negative and half positive, or all positive. As expected, anti-drug use attitudes were associated with the "negative valence" presentation and pro-drug attitudes were associated with the "positive valence" presentation. Implications for drug education suggested a strategy whereby attitudes could be predetermined by adjusting the relative proportion of positive and negative facts to which the learner is exposed. "The question that arises is, of course, how much can we juggle the relative proportion

of positive and negative aspects of drug use before the bias introduced compromises honesty" (Brown, 1976, p. 21).

McGuire (1974) has recommended a communication-persuasion model for manipulating the learner. This model has been derived from research in another field. According to this model, persuasive impact is governed by five major factors. These are source (the person or persons to which the message is attributed), message (characteristics and presentation), medium (through which the message is transmitted), recipient (of the message), and destination (effect intended). For example, the message transmitter has persuasive impact if the recipient perceives that transmitter to be knowledgeable and trustworthy (that is credible). McGuire (1974) suggests attempting to determine who the target population will regard as expert and trustworthy. Hidden beneath this recommendation is an assumption. Since the intent of the message is predetermined (that is, anti-drug use attitudes and behaviors), the credible person must also be selected for their support of the intended outcome. It would not be acceptable to select a credible person who would convey the wrong message. Some considerations under the message factor include: what is included and what is left out, whether opposition arguments are ignored or

refuted, what order the preferred and non-preferred positions are presented, whether to over or underestimate the dangers, and whether to use positive or negative appeals. All of these considerations are offerred to "persuade" the learner to the predetermined attitudes and behaviors. It is to be noted that concern is not for accurate and honest presentation, nor for meaningful intellectual involvement, but rather for whatever presentation form will ensure the desired outcome. (A case of ends justifying the means?) Similar analyses may be made regarding other recommendations made by McGuire (1974) under the communications-persuasion model.[25]

The foregoing examples and discussion have reintroduced concerns regarding educational integrity and ethical responsibility in the current drug education literature. Without

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25 An interesting paradox arises in relation to the communication-persuasion model. Two prescriptions for drug education specifically recommended teaching advertising techniques (Betros, 1974; Coronado Unified School District, 1973), reasoning that the inability to resist drug use is similar to sales resistance to advertising. Supposedly a student schooled in advertising techniques (essentially based on a communications-persuasion model), will be able to resist the pro drug use "sales pitch". It has not occurred to the proponents of these programs that this sales resistance may be as readily applied to the anti-drug message being promoted by the recommended programs. Are students expected to selectively apply these analytical skills only to "undesirable" pursuits as defined by the program proponents?

prejudice to the authors named, nor with intent to question their motivations, the types of manipulations recommended are seen as inconsistent with generally accepted educational procedure and ethics of communication (for instance, see Nilsen, 1966). Whenever attempts are made to control attitudes or behaviors by covert means, whether by conditioning, selective presentation of information, or communication manipulation, these same issues must arise.

Part II--Drug Education as a Preventive Strategy

In Chapter II reference was made to drug education being designed for student groups undifferentiated as to non-medical drug use. From this given situation, two assumptions were identified. The first assumption stated that the problem must be of sufficient magnitude to justify any preventive attempt being applied to all students. The second assumption stated that the prescribed strategies must have the intended effect on a sufficient proportion of those who are identified as part of the problem or who will become part of the problem. Based on the discussion in chapters III and IV, these assumptions are re-examined.

Assumption 1

Incidence = problem conception. According to data presented in Chapter III, the following summary estimates may

be made for non-medical drug use: tobacco 35-45%, marijuana 20-50%, solvents 15%, and all other common non-sanctioned drugs 3-15%. Alcohol requires separate consideration since it does not really fit under this problem conception. Educational programs including alcohol use do so in terms of moderation and safe use rather than abstinence. For this reason, alcohol use is not considered under this heading. A similar phenomena may be starting to occur with marijuana use in the United States where major changes have been made in possession (simple) laws. However, this has not yet been experienced in Canada. Therefore, the maximum proportion of students to which <u>any</u> preventive drug education programs would apply is less than one-half. Using the symbolic form adopted in Chapter II, $P_1/T = .50$ maximum.

<u>Undesirable consequences = problem conception</u>. Estimates are difficult to derive for the undesirable consequences concept because of the paucity of relevant data. As discussed in Chapter III, numerous observers have stated the opinion that few of those who use drugs non-medically experience significant harm. However, actual estimates are seldom offerred. Chambers (director of the Division of Addiction Services, University of Miami School of Medicine) has offerred an estimate (reported in Southern Regional Education

Board, 1972). Out of 100 high school students about 50 will experiment with drugs, perhaps 30 will continue to use drugs for social recreational purposes, five of whom may proceed to involved drug use, and perhaps two will become dysfunctional. This estimate is restricted to non-sanctioned drug use and is consistent with available data. Accepting this as a credible estimate for the non-sanctioned drugs, an examination must be made of the sanctioned drugs--alcohol and nicotine. According to Le Dain (1973) estimates, about two to five percent of alcohol users (about 85% of the adult population) become alcoholic and another two to ten percent may be problem drinkers. Harm associated with tobacco use is more difficult to estimate. Although much is known about probabilities and averages between smokers and non-smokers for various harmful effects, data regarding the proportion of smokers actually experiencing significant harm is not available. However, those who use tobacco, use it regularly (daily). On this basis, it may be concluded that the proportion of smokers experiencing significant harm might be greater than estimated for the other drugs. However, an estimate is not made. Using the symbolic form from chapter II the following proportions are noted.

non-sanctioned drugs $P_1/T = .02$

alcohol P_1/T = .06 to .15

tobacco P_1/T = no estimate

Significance. Justifying drug education in schools becomes difficult on the basis of proportion of students to which the efforts would apply. Maximally, preventive programs apply to less than one-half of those to whom it is applied (under the abstinence objective). But many observers consider the abstinence objective unrealistic (Goode, 1972; Randall & Wong, 1976; Robinson, 1975; Southern Regional Education Board, 1972; Wald & Abrams, 1972; World Health Organization, 1974). If one is to accept this and seek to reduce undesirable consequences through drug education, justification becomes more difficult. Most drug users neither cause nor experience significant harm from non-medical drug use. This may account for the vagueness and ambivalence in goals in the drug education literature which favors an undesirable consequences view, but adopts argument and evaluation consistent with an abstinence goal. This contradiction may be seen in Baker (1973), Bedworth (1972), Cohen (1973), Corder (1975b), Coronado Unified School District (1973), Dohner (1972), Girdano and Girdano (1972), Low (1976), Segal (1972), Strandmark (1974), and Swisher (1974). It appears that this dis-ease with the undesirable

consequences goal has originated in the need to justify the mass application programs on a basis greater than the small proportion of students who will experience harm. In extending program justifications, some proponents have offerred their prescriptions as prophylactic measures for other social ills (for example, Betros, 1974; Cohen, 1973; Coronado Unified School District, 1973; Low, 1976; Robinson, 1975). No detail is offerred regarding these other social ills. These orientations raise another important issue. Recommendations become sufficiently generalized as to be indistinguishable from the goals of conventional educational programs. Although operationalizations may be idiosyncratic to individual programs (for example, Low, 1976), goals do not differ significantly from mainstream educational goals. These programs either deemphasize substantive consideration of non-medical drug use or recommend "objective" drug education (without elaboration) as peripheral to the recommended orientations. This is seen most clearly in Cohen (1973) who considers his alternatives approach to be "a useful, perhaps necessary, adjunct to . . . objective drug education" (p. 2). Low (1976) recommends teaching about intoxicants "no differently than teaching about anything else." He also suggests being alert to "teachable moments." How these

suggestions relate to the author's personal responsibility theme was not explained. There is no doubt these programs offer educational experiences that are potentially valuable. However, it is doubtful that their contribution to preventing drug abuse (the raison d'être) has greater potential than existing educational programs justified on broader grounds.

The Southern Regional Education Board (1972) recommendations represent a unique attempt to overcome these problems in identity and justification. The program clearly states that most students will not experience drug related problems and that drug education can be expected to contribute little to preventing experimental or social/recreational drug use. Continuing concern is expressed for the small proportion of users who will experience drug related harm. However, needs of students for drug education are presented primarily to the benefit of the majority who will not experience drug related harm (both users and non-users). This represents a significant difference over most other programs which show a preoccupation with drug abusers and prospective drug abusers. The Southern Regional Education Board (1973) program is justified for all students. Although recommendations include the decision making skills, self-concept,

personal responsibility, alternatives, and values orientation, these are interpreted in relation to non-medical drug use rather than as abstracted general concepts found in other programs. In this way the efforts of the programs are supplementary to mainstream education attempts to develop these qualities--rather than duplications.

Assumption 2

Separate consideration of the incidence and undesirable consequences positions under the second assumption is unnecessary. No program orientation has been able to offer convincing evidence of its effect. Recent reviews of the research have not been able to derive unambiguous conclusions regarding the effectiveness of drug education (Berberian & Thompson, 1974; Braucht, Follingstad, Brakarsh, & Berry, 1973; Goodstadt, 1974; Randall & Wong, 1976). Some researchers continue to advocate comparison of different approaches to determine which is the most effective in preventing drug abuse (Braucht, Follingstad, Brakarsh, & Berry, 1973; Goodstadt, 1974; Poley, 1973). According to evidence in other areas of education, there is reason to be pessimistic that the elusive elixir of drug education will be found. After examining the available literature in education, Stevens (1967) stated, "One of the psychological phenomena to be

explained is the remarkable constancy of educational results in the face of widely differing deliberate approaches" (p. 7). More recently Averch, Carroll, Donaldson, Kiesling, and Pincus (1972) reported, "Research has found nothing that consistently and unambiguously makes a difference in student outcomes" (p. x). Stufflebeam, Foley, Gephart, Guba, Hammond, Merriman, and Provus (1971) have referred to this phenomena as the "sea of homogeneity". Researchers in drug education appear to be reconfirming this phenomena.

Attempts to justify current drug education strategies on <u>potential</u> effect is also unproductive. Analyses in Chapter IV questioned the viability of major program orientations which are premised upon unsubstantiated assumptions. The major difficulty appears to be an attempt to prevent behavior that is not harmful to most people. The suggestion by observers (for example, Fort, 1969; Goode, 1972, 1973; Kalant & Kalant, 1971) that the drug problem is primarily a moral problem is supported. Previous discussion referred to the difficulty of defending a primarily moral position on grounds that it is logically defensible. It is unlikely that significant numbers of drug use proponents can be persuaded to redefine their concept of rationality to that desired by prohibitionists or to adopt the moral position

advocating abstinence. As far as honesty in education is involved, it is unlikely that a significant effect will be experienced. This appears to account for strategies which have been questioned as to honesty and educational acceptability. In mainstream education, the student has been increasingly expected to develop skills of intellectual involvement and independent thought. Prohibitionists have been, in effect, expecting the student to suspend these abilities. Alternately, it has been assumed that intellectual involvement can only lead to a uniform position (that is, anti-drug attitudes and behavior). To assume that there is only one position of rationality for any question ignores the complexity of the issues. Any act can only be judged rational in retrospect. Errors are made by the most capable decision makers. Society repeatedly confirms that gain is associated with risk. Often the largest gains are associated with the greatest risks. To expect the school to overcome these and other factors in order to create compliance to an abstinence objective, is almost certainly to be met with frustration. Past experience in drug education supports this conjecture.

It should be noted that the Southern Regional Education Board (1972) has avoided many of these complications. Under

the second assumption for drug education, it is more likely to succeed since it does not subscribe to the compliance or abstinence objective. Rather, focus is on the development of "enabling" knowledge, skills, and values without the preconceived notions regarding its effect on non-sanctioned drug use. Unfortunately, information regarding implementation or evaluation of the recommended program is not available.

Part III--Redefining the Role of the School

Enablement versus Compliance

> The use of education to produce behavioral conformity should be questioned. This is basic to whether we consider education as a means of assisting the development of thinking, feeling, self-actualized persons or a means of producing compliant behavior. It is difficult to imagine both goals co-existing without hypocrisy and without conflict. (Brown, 1976, p. 22)

Discussion has been critical of the compliance goal for drug education on grounds that it is unrealistic, inconsistent with goals of education pertaining to intellectual development, and of questionable ethical practice (since it promotes covert manipulative practices). Since there is no reason to expect non-drug use to be the only conclusion from careful intellectual involvement, a compliance objective is not defensible. This does not mean that drug

education should be abandoned (as some have suggested) but rather that the goals should be reexamined in order to establish realistic goals for school programs.

Although the demand for compliance in drug education is referred to as a behavioral goal or objective, it should not be confused with the conventional meaning of the behavioral objective in education. An important difference is to be noted. The behavioral objective in education is a statement of a behavioral manifestation of a learned knowledge, understanding, or skill. This is a means of determining if the learning is within the individual's repertoire not if the individual habitually behaves in certain ways. Thus the behavioral objective in education may be referred to as a repertoirial or enabling objective. But the behavioral objective in drug education seeks not to determine if the student can but rather does engage in the desired behavior. This changes education from a process which enables the individual to do something to a process that conditions or shapes behavioral conformity. (This might be compared to the continuing debate regarding values inculcation in values education. See Barrs (1975) for discussion.)

A comparison may be made by examining a traditional subject. Mathematics is taught in schools to meet the needs

of students in dealing effectively with situations which require mathematical competence. But mathematics may be "abused" and there are instances where mathematical competence is used to misrepresent or to gain unfair advantage. This has not resulted in a public outcry to introduce "preventive mathematics abuse education" in schools. Nor has it resulted in the suggestion that continuing to teach mathematics will inflame the "mathematics problem" further. The school's role has been to <u>enable</u> students to make use of present knowledge of mathematics <u>not</u> to guarantee that applications will only occur in predetermined ways. Other forms of social control such as law enforcement, social pressures, and religion serve to keep applications within certain bounds (however imperfectly). A similar parallel may be drawn with psychological training in which many applications may be contrary to standards of social acceptability.[26] It has not been suggested however, that education guarantee such knowledge and skills are used only in the socially prescribed ways. Educational responsibility has been to

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26 It is to be noted that applications of psychology presented under the section on Educational Integrity and Ethical Responsibility could be considered an "abuse" of psychology.

teach the psychological discipline (including standards for ethical application), without attempting to bias, misrepresent, withhold, or manipulate the attitudes or behaviors of the learner. Adherence to acceptable standards of application are controlled by a combination of legislation, peer review, and social pressures. Mathematical, psychological, and other education programs are not evaluated for their ability to ensure compliant behavior to predetermined social standards, but rather for their ability to provide enabling knowledges and skills for the learner.

Redefining the role of drug education as an enabling process rather than a compelling process overcomes many of the difficulties presented above. In doing this, the absolutist stance of the prohibitionist is rejected in favor of a relativistic stance (see Goode, 1973, p. 29). The educational process is determined on the basis of enabling the learner to deal with a world in which drugs for non-medical use are readily available (both sanctioned and non-sanctioned types). This does not limit the applicability of drug education to drug abusers (sense I or sense II) as has been characteristic of existing programs but also permits relevance to all students to which programs are characteristically applied. This has been explained more fully in a succeeding

section.

Concern for the Non-Abuser

Existing programs and prescriptions for drug education have been preoccupied with the attempt to prevent drug abuse. As noted by Swisher and Piniuk (1975), "The alarming statistics on illegal drug use tend to make us forget that the majority of students today still do not abuse drugs" (p. 69-70). The World Health Organization (1974) made a similar observation and advised that there is little point in attempting to prevent drug related problems in persons already at low risk of experiencing these problems. But programs and prescriptions designed to prevent drug abuse have been applied to all students and little concern has been noted for the majority of students who are not at risk and to whom these efforts do not apply. Previous argument questioned the ability of existing programs to justify their efforts on these grounds. Yet, a single program prescription has been found that is concerned with "the 95 percent of the student population who probably will never become drug abusers" (Southern Regional Education Board, 1972, p. 23).

Under an enablement objective, drug education may be made relevant (and justifiable) for the non-abuser as well

as the abuser (however defined). Whereas drug education may have important enabling value to persons regarding their personal use or non-use of drugs for non-medical purposes, it may also be seen as important to the individual's ability to respond appropriately to other's non-medical drug use. For instance, the alcoholic has been estimated to directly and adversely affect six to eight other people (Strachan, 1975). (Other estimates have been as high as twelve.) Individuals under the influence of drugs directly or indirectly influence the lives of others. In order that the non-abuser may respond competently to these situations, they must have within their repertoire appropriate knowledge and skills.

On another level, students will eventually be in positions of influence which necessitate responses to drug related problems. This may occur in roles as employees, employers, law makers, law enforcers, policy makers, policy enforcers, administrators, or parents. In order to make the most appropriate judgments and responses, individuals must have a knowledge and understanding of the issues and a sensitivity to the complexities involved. The literature is replete with examples and commentary of reactions to drug related situations made in ignorance and emotional involvement which

have been found to be unreasonable, unjust, and problems in themselves (for example, see Brecher, 1972; Fort, 1969; Goode, 1972, 1973).

The enablement orientation may also be preventive in intent even though the compliance objective has been rejected. However, enablement attempts to prevent drug related problems (not use per se) through intellectual involvement rather than through means which effectively limit such involvement. Decisions regarding non-medical drug use or non-use would be expected through considerations of extant and situationally relevant variables rather than mindless adherence to the demand for abstinence or to pro-drug use pressures. The person would be "enabled" to engage in an intellective process of weighing the probable costs, possible costs, and anticipated benefits. The result of the process could not be predetermined since different observers attribute different significance to the same information. Any weighing process could be expected to be idiosyncratic to the individual. If a person chooses to engage in non-medical drug use he/she may also do so in a manner which reduces the probability of harm to themselves or others. It would generally be expected that the "enabled" person would freely choose to keep drug related behaviors within bounds

that would not seriously harm themselves or others (most does not anyway). However, guaranteeing that the person would choose intellectual involvement would be no more applicable than the same expectations for mathematically, psychologically, or otherwise competent people. If an enabled person adopted "irrational", "unwise", "harmful", or "undesirable" behavior (by their own determination or by retrospective analysis), it would not be due to an inability to make informed judgments (that is, by default). Rather such action would be freely chosen or made in error. (In any human endeavor it would be unrealistic to expect to eliminate the possibility of error.) It is to be noted that this equally applies to the non-abuser. The non-abuser would also be expected to generally adopt attitudes and behaviors constructive to preventing or alleviating problems associated with non-medical drug use of others.

Beyond prophylaxis, drug education may be defended as educationally important in its own right. Non-medical drug use and related issues represent one of the most prominent and far reaching social forces in society. Only a few minor cultures have been found which do not have a consciousness altering drug. All others have one or more in which the majority of citizens indulge. Non-medical drug use has

played important roles in history. The "opium wars" between Britain and China occurred because China disapproved of the competition between imported opium from India and locally grown opium. The conquistadors took over the Inca's coca leaves (cocaine) along with their empire. Although the Spanish superstitiously declined use of the substance, it was effectively used to control the natives. The "Boston Tea Party" would probably not have occurred if a large number of people had not become accustomed to obtaining caffeine from tea. British taxation would have been of little consequence if it were not for the drug upon which people had become accustomed and dependent. Sigmund Freud was greatly troubled and influenced by his inability to give up smoking, even though it resulted in numerous painful operations to his mouth and jaw. The "real thing", Coca-Cola, owes much of its original popularity to two drugs, cocaine and caffeine. Continuing popularity is partly due to the psychoactive and dependence producing qualities of caffeine (since cocaine has since been removed). Non-medical drug use is a major economic force. Production, supply, demand, taxation, law enforcement, treatment, and education related to both sanctioned and non-sanctioned drugs represent billions of dollars. The Olympics and other sporting events owe much (good or

bad) to non-medical drug use. The list is endless (see Brecher, 1972; Le Dain, 1972, 1973; Wells, 1973). To understand non-medical drug use issues is to gain understanding of ourselves and society. To withhold meaningful consideration of these issues for a vague fear that such knowledge may stimulate use cannot be defended on educational grounds alone. Accepting drug education for reasons beyond a preventive role requires a reconsideration in meaning. "Drug education" can no longer be used as a contraction of preventive drug abuse education (see Chapter I) but rather becomes a broader concept in which prevention is included.

Considerations of Content and Form

The 1974 New York State legislative document (Betros, 1974) observed "we cannot understand the rationale of using the rubric drug abuse prevention to include everything under the sun" (p. 30). Poley (1974) has made a similar comment regarding some of the available programs that "while the efforts may be worthwhile in themselves, their connection with drug education is so remote that they may have very little effect on drug usage" (p. 2). Previous argument has been critical of programs which offer little more than duplications of existing education. The question that arises is how drug education would relate to the rest of education.

Education is engaged in developing enabling skills in problem solving, decision making, values education, higher intellectual processes, personal responsibility, self-concept, etc. To attempt duplication of these under the banner of drug education cannot be justified. Yet, much of the literature appears to be restating education in this way (for example, see Coronado Unified School District, 1973; Low, 1976). However, the enablement orientation has specifically been described in terms of competency in reacting to drug related situations. This orientation is considered supplementary and complementary to other educational endeavors by incorporating drug information and drug issues. This may be obvious to state, but as the information approaches became discredited, preventive drug education efforts drifted from substantive consideration of drugs and drug issues for fear of null or inflammatory effect. Under the enablement orientation these fears are no longer relevant and substance again becomes important.

Enablement includes a full appreciation of laws and social expectations relating to non-medical drug use. With respect to laws, it is inconceivable in a country where ignorance of laws is not permitted in defense of violation, that the student is effectively deprived of the knowledge of

laws under which he/she is expected to live. Social expectations and values often have been presented to students by command or by attempts at covert manipulation. It is interesting to note that prohibitionists have implied that societies' values and laws regarding non-medical drug use are fair and reasonable. Yet, there has been an obvious concern that the young might not realize this if given a chance for meaningful intellectual and questioning examination. If, indeed, societies' values and rules are fair and reasonable, meaningful intellectual examination should present no threat. This is no different than the reasoning behind the current values clarification approach in other areas of education. The presentation of social values and expectations regarding non-medical drug use is not the same as values inculcation. Rather knowledge, and understanding of these are important under the enablement orientation. These must be part of the repertoire from which the student may draw in responding to any drug related situation in which they are part.

The place of information in drug education is still at issue. The World Health Organization (1974) noted "education cannot occur in a vaccuum, and its substance is information" (p. 49). But what, how much, and when? This question can only be approached in general terms since it depends on

factors such as developmental level and locally relevant variables such as placement, status, needs, and support. In general, concentration on biochemical and pharmacological properties of drugs is not indicated. Whereas this type of information should not be ignored there has been a tendency in the past to overemphasize it. Since time available for drug education is finite, judgments must be made regarding what can be practically included and that which cannot--without sacrificing representativeness or biasing the educational presentation. Because of prominence, significance to society, impact, and applicability, alcohol and nicotine should be considered for major concentration and priority. The sensational non-sanctioned drugs demand less consideration since their role in society is less. Whereas infrequently occurring effects of non-medical drug use may be interesting, their occurrence do not warrant much attention. To the extent that any effects are considered, care must be taken to avoid representing them out of proportion to their occurrence. Bounds for consideration should not be restricted to alcohol, nicotine, and the sensational non-sanctioned drugs. Over the counter and prescription drugs figure prominently in non-medical use. By Le Dain's (1973) estimation, significance of these as non-medical agents exceeds the

sensational non-sanctioned drugs.

Knowledge, understanding, and experience in dealing with drug issues are especially important to the enablement process. This goes beyond being able to intellectualize about drugs. Students should be able to develop defendable positions on the issues--to formulate their own positions in relation to the "preferred" positions. Issues are numerous and might pertain to responsibility, legality, morality, principle of consciousness alteration, risk-benefit issues, age of majority, impaired vehicle operation, dealing with drug dependent friends or family, and seeking assistance. Possible issues for consideration would only be limited by time and expertise available. As Le Dain (1973) has stated:

> What is important in the long run is not the detailed, technical knowledge (although this should be imparted as accurately as possible) but the understanding of self and the role which drugs play in our lives . . . the goal cannot really be more than to assist the individual to see where his true personal interest lies. In the final analysis we have no alternative but to place our faith in the value of this kind of understanding. (p. 213)

CHAPTER VI

SUMMARY AND CONCLUSIONS

Public demand for drug education in schools has resulted in a haphazard development of programs and prescriptions. As a result, drug education has become the subject of continuing criticism and debate.

This dissertation has presented an evaluation of drug education in a psychological and educational context. Particular attention was directed toward two primary issues: (a) the extent to which drug education as it has evolved may be justified, and (b) the ability of specific approaches to bring about their intended outcome.

The failure by workers in drug education to establish a precise vocabulary for communicating essential ideas introduced special difficulties for the analysis of the literature. Of particular note are the wide discrepancies in the terms "abuse." In addition, there has been a failure to precisely define the "drug problem" to which drug education has been addressed. Detailed discussion of these problems is found in Chapters II and III.

Analysis of the literature was based on three observations. First, drug education has been conceived for application to all students or to subgroups of students who are

undifferentiated as to non-sanctioned drug use or risk of becoming non-sanctioned drug users. (The implied belief that all students are at risk of becoming drug users cannot be verified as presented in Chapter II.) The second observation is that almost all programs focus on the prevention of non-sanctioned drug use per se. Thirdly, a few programs allude to concern for the harm associated with non-sanctioned drug use (as opposed to non-sanctioned drug use per se). However, most of these were found to adopt procedures and outcome expectations consistent with preventing use.

Evidence presented in Chapters II and III resulted in the following conclusions:

1. The majority of students in the target group are not and do not become users of non-sanctioned drugs. Surveys show that less than one-half of students try some form of non-sanctioned drug. Excepting cannabis, this proportion decreases to less than 15%.

2. The majority of students who use non-sanctioned drugs discontinue use after a relatively brief involvement.

3. The majority of non-sanctioned drug users do not cause nor experience significant harm. Drug related harm is associated primarily with users who are heavily involved in non-medical drug use. A small proportion of the target

group becomes heavy users. (Less than 2% of the target group suffer significant harm from using non-sanctioned drugs.[27])

These observations indicate that drug education maximally applies only to a minority of the students to which it is directed. It was, therefore, concluded that drug education cannot be justified as currently conceived.

The efficacy of specific drug education approaches was analysed in Chapter IV. Additional complications to that analysis were identified. There is a paucity of relevant and credible research on the effectiveness of drug education approaches. Available information is ambiguous and lacks significant results. There also has been a consistent failure of program proponents to consider important related empirical information.

The information presented in Chapter IV does not support the prominent drug education approaches. The intention to improve decision making skills, self-concept, and other psychological states were noted as common inclusions in many

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[27] Although alcohol is not a non-sanctioned drug, non-sanctioned use of alcohol may result in significant harm to as many as 10-15% of users.

programs. Proponents of the decision making orientations assume that non-sanctioned drug use occurs because young people are unable to make wise, logical, or rational decisions. Yet, there are no consistent reasons to expect that wise, logical, or rational decisions will exclude non-sanctioned drug use. Proponents of self-concept and mental health development approaches have based their reasoning on the assumption that psychological defects are causally related to non-sanctioned drug use. There has been a failure to recognize that research linking poor self-concept and other undesirable psychological states derive primarily from the study of the clinical addict. Non-clinical addicts and other non-sanctioned drug users do not differ significantly from non-users in these qualities. Not only have proponents of these orientations made erroneous extrapolations between clinical addicts and other users, they have also assumed a cause-effect relationship which cannot be verified. On the basis of information and argument in Chapter IV, these orientations could apply to only a very small proportion of non-sanctioned drug users.

Chapter IV also examined prominent drug education approaches according to their expectations, the viability of their underlying assumptions, their consistency with existing

data, and their relationship to the broader educational process. In each case, it was concluded that these programs do not demonstrate an ability to bring about their intended effect.

In addition to the conclusions that neither drug education nor specified approaches may be justified under existing expectations, several other important issues were raised. First, a number of prominent programs have been found to be inconsistent with established educational thought. Of particular note is the confusion between "information", "cognition", "attitudes", and "values" (see Chapter IV, Part II). This has led to contradictions due primarily to ignorance and/or disregard for the educational discipline. Closely related is the intent to create compliance or behavioral conformity through education. Education is seen by many drug education proponents as a "compelling" process rather than as an "enabling" process. As argued in Chapter V, the desire to create antidrug use attitudes and behaviors has resulted in strategies which effectively deny the student meaningful intellectual involvement (despite claims of the opposite). The writer has also argued that preference for compliance over enablement is an antithesis of education. Another related issue overrides all others. Ethics and

honesty are fundamental concerns in psychology and education. However, with the desire to create antidrug use attitudes and behaviors, many drug education programs have attempted to systematically manipulate the student and/or the educational process in contradiction to generally accepted ethical principles. This has been largely unrecognized in the literature. Complete discussion of the ethical issue is found in Chapter V.

Chapter V has presented an alternate conception of drug education which avoids many of the problems identified in previous discussion. The conception is based on an enablement theme and neither expects nor demands that students will become uniformly abstinent. It does, however, expect a positive effect in reducing problem drug use. Thus removed from the single-minded concern for creating behavioral compliance, other reasons for offerring drug education to all students may be identified. Several of these possibilities are presented in Chapter V.

The task of developing appropriate drug education programs for schools has just begun with the general recommendations arising out of this dissertation. Educators wishing to proceed may find the issues and arguments contained herein useful for establishing rationales, procedures, and expecta-

tions. In particular, attention must be directed to functionally resolving the nature of the problem, clearly defining the meaning of abuse, specifying relevance to users, potential users, and non-users, and developing appropriate educational experiences with due regard to educational integrity and ethical responsibility.

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27 Available from Information Canada, Ottawa.

28 Available from the Queen's Printer, Edmonton